THE

REVENUE REGISTER.

No. 12.] MADRAS:—TUESDAY, DECEMBER 15, 1874. [Vol. VIII.

THE LACCADIVE ISLANDS.

Most of our readers are no doubt familiar with the Laccadive Islands, at least by name; but not many of us know much more about them. We, therefore, propose to devote a few lines to a notice of these islands and their peculiarities. Our attention has been drawn to the subject by an interesting report on them, supplied to us some little time since, by the kindness of the Revenue Secretary to Government. From this report we learn that G. Stokes, Esq., Assistant Collector of South Canara, accompanied by Surgeon-Major Shortt, visited these islands in February 1873. Mr. Stokes tells us that there are ten islands in all, of which five are attached to the District of South Canara, and the remaining five are nominally under the Rajah of Cannanore; but practically are "no man's land," having shaken off the Rajah's authority some years ago. In consequence of this attempt at independence, there has been for some time no government whatever in these five islands; but the people seem to have grown tired of this condition, and are anxious to be governed in the same manner as the five already attached to South Canara. It is, we think, very surprising, and a proof of the naturally good disposition of the inhabitants of these islands, that Mr. Stokes finds they have not lapsed into anarchy, and that, in fact, the principal result of their freedom has been to infuse into them more life and independence than are to be found in the other islands. The islands and their inhabitants have changed so little in the last few years that, we are told, the report made by Mr. Robinson twenty-five years ago on the Government islands would still apply, even in all its minutiæ, to the whole group. It is very unfortunate, so far as our information goes, that the islands should have changed so little, for Mr. Stokes, with commendable economy of time, trouble, and paper, comments and reports only on things needing immediate attention, referring his Collector for further information to the report written by Mr. Robinson twenty-five years ago; and this report, which we cannot but think must be of great interest, we are not so fortunate as to have seen. The planting of cocoanut trees seems to be going on steadily, but the returns were not considered quite reliable, as the officers deputed to count the trees did not do so, contenting themselves with asking the people how many trees they possessed, which led them very naturally to understate the number they actually owned. The population shows a slight tendency to increase;

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but has not yet recovered from the outbreak of cholera in 1863. We find that the number of cattle on the islands has decreased since 1866, which is very easily explained by the extension of plantation, and also by the fact that, in one island at least, goats have been ostracized in consequence of the injuries inflicted by them on the cocoanut trees. When it is remembered that the inhabitants of these little islands depend entirely for subsistence on the coir produced by the cocoanuts, we can readily understand the crusade they have preached against such destructive gardeners as goats. From the report, we gather that education has entirely gone out of fashion, if, indeed, it ever had a footing. In one island, only four boys and one girl attend school. On this subject the Board of Revenue remark that "the educational wants of the islands will be best met by introducing, as occasion opens, the system of elementary schools proposed by Mr. Macgregor for the similar Moplah population in Malabar." Amidst this general stagnation it is satisfactory to find that boat building is going on with activity, a sure proof of the substantial prosperity of the people; while the wonderful freedom of the islands from all serious crime, seems to point both to a sufficiency of food and an absence of any sort of rivalry or competition. It seems quite a wonder, in this age of hurry and emulation, to find a corner of the world where these evil causes and their still more evil results are unknown. We do not mean to infer from this that the Laccadive Isles are in all senses "Islands of the Blest;" they are exposed to the same ills as the rest of the world, and seem to suffer terribly from enormous hordes of rats, and from some kind of boring worm that greatly injures the cocoanut trees. Mr. Thomas, then Collector of South Canara, seems to have sent the islanders a valuable present of mungooses some three or four years ago. Mr. Stokes thought they had done no good, having merely driven the rats up the trees; but it is evident enough that they must have done good service, if not in diminishing the number of rats, at any rate, in preventing their increase, for they have increasd and multiplied while depending on the rats for their food. Mr. Thomas afterwards sent the islanders another boon in the shape of owls which, if once they become domesticated, will wage a war of extermination on the rats in the trees, and will, no doubt, drive them down again to the mungcoses below; so that the rats, we may easily fancy, will soon be in the position so touchingly described by the ancient Britons in their letter beseeching the aid of the Romans. So far as the fat white worm is concerned, he seems likely to be confronted by the bills of jays which are to be sent over to the rescue of the cocoanuts. Mr. Stokes gives us an interesting account of the coir manufacture and coir monopoly. He does not appear to think that machines for twisting the coir would be of much service; but Mr. Thomas, in his letter, says Dr. Shortt promised him a sample machine, and that, on its receipt, he intended to send one to each island. So far as the monopoly is concerned, whether it will pay, or whether it will not, "it would probably be impossible to devise a system which would be so acceptable and so well suited to the people of these islands and to existing conditions."

In writing of the criminal and civil returns, Mr. Stokes expresses himself as follows:—"I am of the same opinion as my predecessor, in reporting on these Islands, that grave crimes are almost unknown on them. They must be visited, in order that

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the stagnation and the monotony of the existence which the inhabitants drag along may be appreciated. In such a state of society, stagnant, civilised in some degree, and orderly, experience in other cases goes, I believe, to show that grave crime is not found. It is not in retired country-districts, where the wheels of life move slowly, that grave crime is common, but in towns where life is busiest. The motives which urge to it are wanting; but further, in this case, the people are all more or less intimately connected and personally known to each other." In fact, for these simple islanders might have been written the verses of Gray's Elegy, which run as follows—

> Th' applause of listening senates to command,
> The threats of pain and ruin to despise,
> To scatter plenty o'er a smiling land,
> And read their hist'ry in a nation's eyes.
>
> Their lot forbade: nor circumscribed alone
> Their growing virtues, *but their crimes confined;*
> Forbade to wade through slaughter to a throne,
> And shut the gates of mercy on mankind.

The Monegar appears to be the great man on these islands, and to have almost uncontrolled authority. He, however, in fact, resides in Amini, and visits Kiltan and Chetlat only once a year; and we suspect that the Board have discovered the true cause of this irregularity in the fact that the islanders have hitherto been expected to carry the Monegar and staff gratis; whereas, under the new system of payment of hire and batta, more regularity may be expected. Mr. Thomas, in his letter, remarking on a part of the report referring to the complaints of the islanders, says, "in many things they are very children." He may well say so; for Mr. Stokes, in advocating a reduction of peons employed, says, "If it be considered that the peons are needed as Policemen, the want could easily be supplied by giving the Ugranies, minor officials, some small extra pay, say Rupees 2 a-month each, and requiring them to perform the duties. Force would not often be required with prisoners, as the Monegar states that to confine a man it is only necessary to tell him to sit in a corner with his face to the wall and he does so. There is no place of confinement in Amini; the building of one has been sanctioned, but none has been built." These are docile subjects indeed. The islanders preferred a few complaints, or rather petitions, one of which is that they should be allowed a little more time to pay for the rice supplied to them in 1871; second, that the present Christian Monegar should be removed and a Mussulman appointed; thirdly, that they might have more salt at a cheap rate; fourthly, that the quantity and quality of the rice supplied to them in exchange for their coir should be better; fifthly, that they should enjoy an increased participation in coir profits; sixthly, that the entrances to the lagoons should be cleared; and lastly, that the time for bringing the coir to Mangalore should be extended. On the whole, these petitions seem to have succeeded very well: an additional year was to be allowed the islanders for paying their rice debt; they were to have a Mussulman Monegar, as, owing to the social duties incumbent on a Monegar in the islands, no Christian could properly discharge his duties; a little more salt was to be granted, as an experiment, in order to induce the people to salt some of their fish; the petition as to deterioration in quantity and quality of rice did not seem to be well-founded; the improvements to the harbours were not considered necessary, nor could the boats be allowed to reach Mangalore later with the coir in consequence of the early onset of the monsoon; but the request for an increased participa-

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tion in coir profits was granted in this wise. The islanders were to have 25 per cent of the net profits, provided the quantity did not fall below 674 candies, and realized not less than Rupees 40 per candy. Besides these requests preferred by all the islands alike, the people of Kadamat prayed to be permitted to export their coir in their own boats. It appears that out of 111 males on this island, 90 are tenants of the people of Amini; that the people of Amini compel their tenants to send coir in their boats charging them 20 per cent for freight; and that, though the coir of the island of Kadamat is better than that of Amini, the producers reap no advantage, because, as it is exported in the Amini boats, it was paid for and classed the same as the inferior sort produced in Amini. On this point the Board of Revenue ordered that relations of dependence as between islands, *e. g.*, Kadamat on Amini should cease. In consequence of this, the people of Kadamat have since been able to send their coir in their own boats, save the 20 per cent paid to Amini as freight, and also enjoy the advantage of having their coir classed at its own value. Finally, the Board and the Government thanked Mr. Stokes for his interesting report, and remarked that the general question raised by it must lie over pending the necessary action in the Political Department; which, we suppose, means the extending to the islands, formerly belonging to Cannanore, the system of government enjoyed by those attached to South Canara.

CIRCULAR ORDERS OF THE BOARD OF REVENUE.

No. XXXVII.

STANDING No. 275-4.

ADDITION TO ATTACHMENT NOTICE.

Proceedings of the Board of Revenue, dated 3rd November 1874, No. 3,155.

THE following addition will be made to Form 5 included in Board's Standing Order, No. 275:—

2. "You will further take notice that from the date of this Attachment Notice until the date of sale of your land hereby attached, you are, and will be held, liable for all kists thereon accruing, and the said kists will be demanded of, and levied from you, as arrears of Land Revenue."

No. XXXVIII.

STANDING No. 131-1.

COWLES FOR CLEARING WASTE LAND OF PRICKLY PEAR.

Proceedings of the Board of Revenue, dated 21st November 1874, No. 3,348.

G. O., dated 29th September 1874, No. 1,236, Revenue Department.

As an inducement to ryots to clear waste land covered with prickly pear, cowles free of assessment, varying in period from five to ten years at the discretion of the Collector, will in future be granted on the following condition.

2. The extent of land to be cleared yearly will be entered in the cowle; (thus in a five year cowle it will be made a condition that one-fifth of the land is to be cleared yearly), and the forfeiture of the cowle will be the penalty of non-fulfilment of the contract.

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OFFICIAL PAPERS.

Revenue Settlement and Collections—Madras—Fusly 1282.

Proceedings of the Madras Government, Revenue Department, 23rd June 1874.

(Concluded from page 348.)

75. **Arrears Recoverable and Doubtful.**—The arrears recoverable and doubtful under all heads appertain to the Districts and to the Fuslies detailed in the accompanying M.S. statement, an abstract of which is as follows :—

Items.	Fusly 1265.	Fusly 1266.	Fusly 1267.	Fusly 1268.	Fusly 1269.	Fusly 1270.	Fusly 1271.	Fusly 1272.	Fusly 1273.	Fusly 1274.	Fusly 1275.	Fusly 1276.	Fusly 1277.	Fusly 1278.	Fusly 1279.	Fusly 1280.	Fusly 1281.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Permanently Settled...	...	...	...	...	...	......	......	......	......	......	......	......	......	349	940	78,565	3,46,119	4,25,973
Quit-rent on Shrotriem and Inam Villages...	...	...	...	...	...	60	30	37	35	36	210	204	343	1,168	2,532	4,457	9,637	18,749
Ryotwar	2	33	90	185	194	183	221	239	764	438	2,668	3,955	2,879	13,169	30,370	68,279	1,46,507	2,70,176
Miscellaneous... ...	...	...	...	...	168	1,409	10,580	1,955	4,700	18,270	13,595	19,141	18,981	25,926	30,229	61,234	1,24,626	3,30,814
Total...	2	33	90	185	362	1,652	10,831	2,231	5,499	18,744	16,473	23,300	22,203	40,612	64,071	2,12,535	6,26,889	10,45,712
Abkari	...	...	...	...	...	......	......	......	......	......	......	......	2,523	295	......	4,758	16,506	24,082
Income-tax...	...	...	...	...	...	......	......	......	......	......	......	......	......	......	328	1,436	3,132	4,896
Salt	...	...	...	...	...	......	......	......	......	......	......	......	......	......	......	......	16	16
Total...	2	33	90	185	362	1,652	10,831	2,231	5,499	18,744	16,473	23,300	24,726	40,907	64,399	2,18,729	6,46,543	10,74,706

From the foregoing it will be observed that the arrears at the close of October 1873, after deducting those which the Board have recommended to be written off, amounted to Rupees 10,74,706. The Collectors concerned are requested to take early measures for recovering or otherwise disposing of these balances.

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76. Comparative view of Collections from all Sources, Current and Arrears, within the Fusly.—The following statement exhibits the Collections, Current and Arrears, under all heads of Revenue in comparison with the previous years, the result being a net increase of Rupees 9,21,726 in the Collections actually brought into the Treasury over those of Fusly 1281:—

	RS.
Fusly 1281	7,15,86,020
„ 1282	7,25,07,746
Increase ...	9,21,726

Items.	Fusly 1281.			Fusly 1282.			Increase.	Decrease.
	Current.	Arrears.	Total.	Current.	Arrears.	Total.		
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Permanently Settled..	40,43,272	11,36,363	51,79,635	42,51,737	8,68,545	51,20,282	......	59,353
Jodi on Shrotriem Villages	4,92,936	1,37,109	6,30,045	5,16,870	1,39,708	6,56,578	26,583	......
Ryotwar	319,11,037	32,88,495	351,99,532	332,29,529	29,37,114	361,66,643	9,67,111	......
Miscellaneous	28,09,692	9,43,598	37,53,290	30,11,815	8,34,762	38,46,577	93,287	......
Total...	392,56,937	55,05,565	447,62,502	410,09,951	47,80,129	457,90,080	10,27,578	......
Excise on Spirits and Drugs, (Abkari) ...	53,77,501	5,26,348	59,03,849	56,06,822	4,46,904	60,53,226	1,49,377	......
Income-tax	6,82,064	77,071	7,59,135	4,84,837	30,650	5,15,487	......	2,43,648
License-tax	272	......	272	171	......	171	......	101
Salt	128.87,193	838	128,88,031	128,50,954	1,672	128,52,626	......	35,405
Sea Customs	29,09,871	......	29,09,871	28,73,145	437	28,73,582	......	36,289
Land Customs ...	2,05,900	......	2,05,900	1,95,369	......	1,95,369	......	10,531
Stamps. Judicial ...	25,16,803	......	25,16,803	25,40,164	.....	25,40,164	......	......
Stamps. Non-Judicial ...	16,39,657	......	16,39,657	16,87,041	......	16,87,041		
	41,56,460	......	41,56,460	42,27,205	......	42,27,205	70,745	......
Total...	262,19,261	6,04,257	268,23,518	262,38,003	4,79,663	267,17,666	......	1,05,852
Grand Total...	654,76,198	61,09,822	715,86,020	672,47,954	52,59,792	725,07,746	9,21,726	......

77. Grose Revenue and Charges of Collections compared.—The total charges of the year amounted to Rupees 59,96,031, and compared with the preceding year exhibit a net increase of Rupees 36,205.

——	Management Charges.	Extra Charges.	Total.
	RS.	RS.	RS.
Fusly 1281	38,82,269	20,77,557	59,59,826
„ 1282	39,72,877	20,23,154	59,96,031
Increase...	90,608	Decrease 54,403	Increase 36,205

78. The proportion of charges to receipts under each head of revenue stands as shown in the margin, the total charges bearing to the total receipts the ratio of 8·2 per cent. The corresponding ratio for the previous year was 8·6 per cent. It must, however, be here remarked that the charges shown above do not appear to have been correctly calculated by the Collectors. They include the amounts paid as refunds, and the one-fifth of land revenue charges debitable to "Law and Justice." They do not, moreover, correspond with the sums given by the Accountant-General. Instructions will be issued to the Collectors on the subject, and correct returns will be obtained for the current fusly.

	Total Charges.	Ratio.
	RS.	
Land Revenue	38,42,208	8·3
Abkari	2,51,462	4·1
Income-tax	19,650	3·8
Sea Customs	1,73,634	6·0
Land Customs	17,528	8·9
Salt	14,15,649	11·0
Stamps	2,75,900	6·5
Total ...	59,96,031	8·2

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79. Extent of Coercive Measures used in the Realization of Revenue.—The subjoined statement exhibits the extent to which the provisions of the law for the realization of arrears of revenue were enforced :—

Districts.	Process issued.			Estimated value of Property attached.			Property Sold.					
							Land.		Personal property.		Total.	
	Number of Villages.	Number of Ryots.	Amount of Arrears.	Land.	Personal Property.	Total.	Estimated value.	Value actually sold.	Estimated value.	Value actually sold.	Estimated value.	Value actually sold.
	NO.	NO.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Ganjam ...	773	19,398	1,31,347	423	75,983	76,406	248	11	756	729	1,004	740
Vizagapatam ...	218	1,639	37,591	10,726	22,298	33,024	5,683	3,267	700	793	6,383	4,060
Godavery ...	782	8,703	2,13,814	73,887	1,15,220	1,89,107	11,951	10,903	18,612	18,761	30,563	29,664
Kistna ...	311	2,258	60,833	5,518	43,624	49,142	3,829	2,907	2,650	2,604	6,479	5,511
Nellore ...	772	42,276	3,34,936	23,546	1,21,910	1,45,456	11,828	6,918	44,421	37,364	56,249	44,282
Cuddapah ...	536	2,389	23,847	7,562	14,655	22,217	5,268	3,309	6,709	3,400	11,977	6,709
Bellary ...	712	2,947	39,237	15,677	26,420	42,097	7,553	3,601	3,321	2,451	10.874	6,052
Kurnool ...	538	5,013	62,428	21,241	5,465	26,706	5,908	5,369	1,152	1,503	7,060	6,872
Madras ...	17	485	4,210	33,853	937	34,790	3,149	4,767	177	179	3,326	4,946
Chingleput ...	1,268	21,852	3,94,693	1,79,101	1,98,826	3,77,927	1,01.939	1,06,152	9,058	9,620	1,10,997	1,15,772
North Arcot ...	2,482	72,437	2,52,623	26,695	74,032	1,00,727	12,644	15,370	37,560	25,255	50,204	40,625
South Arcot ...	1,706	22,196	4,41,708	89,228	39,519	1,28,747	33,982	52,984	11,071	12,308	45,053	65,292
Tanjore ...	1,924	7,186	1,60,012	61,965	93,521	1,55,486	28,445	37,075	10,469	12,828	38,914	49,903
Trichinopoly ...	170	8,522	65,532	26,286	2,948	29,234	4,271	5,576	2,368	3,464	6,639	9,040
Madura ...	200	1,338	15,373	12,920	1,937	14,857	9,715	8,200	823	954	10,538	9,154
Tinnevelly ...	268	912	44,819	30,646	7,571	38,217	30,646	30,992	7,571	8,342	38,217	39,334
Coimbatore ...	818	21,456	1,38,764	1,627	1,980	3,607	1,028	1,756	187	268	1,215	2,024
Nilgiris ...	5	75	2,632	1,926	5	1,931	2,374	2,615	......	......	2,374	2,615
Salem ...	1,498	7,501	77,263	5,847	27,634	33,481	2,578	6,008	1,105	1,498	3,683	7,506
South Canara ...	37	51	2,807	297	745	1,042	297	297	705	931	1,002	1,228
Malabar ...	68	490	4,137	945	3,569	4,514	745	515	788	945	1,533	1,460
Total ...	15,103	249,124	25,08,606	6,29,916	8,78,799	15,08,715	2,84,081	3,08,592	1,60,203	1,44,197	4,44,284	4,52,789

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Processes were issued in 15,103 villages against 249,124 ryots for the recovery of Rupees 25,08,606, and property was attached to the estimated value of Rupees 15,08,715. But the value of property actually sold was only Rupees 4,52,789, of which Rupees 3,08,592 represent the value of the puttah lands sold, and Rupees 1,44,197 that of movable property. The amount of arrears for which recourse to law was necessary was greater in Fusly 1282 than in the previous year, and the property sold for arrears was also greater.

The Districts in which the property sold for arrears is remarkably large are those noted below. In the other Districts the property sold in each was below 10,000 Rupees:—

		Fusly 1282.
		RS.
1.	Chingleput	1,15,772
2.	South Arcot	65,292
3.	Tanjore	49,903
4.	Nellore	44,282
5.	North Arcot ...	40,625
6.	Tinnevelly	39,334
7.	Godavery	29,664

The Board are now inquiring into the causes why it has become necessary to employ coercive measures so largely, and a report will be separately submitted to Government on the subject.

80. Miscellaneous Subjects — *Hoonjeram and Palconda estates.*—The results of these estates, it will be observed, are as usual very satisfactory. The estates are rented out for Rupees 1,31,000, and the revenue demand amounted to Rupees 1,58,979, the whole of which, with the exception of Rupees 2,220 was collected by the renters. The renters laid out in Fusly 1282 Rupees 6,395 on irrigation and other works of agricultural improvement against Rs. 5,898 in the previous year. The marginal figures indicate the state of cultivation in these estates.

	Fusly 1281.	Fusly 1282.
	ACRES.	ACRES.
Sugar-cane ...	507	233
Paddy ...	8,535	10,156
Indigo ...	2,153	1,198
Other Grains.	2,527	2,133
Total...	13,722	13,720

81. The State of the Taluk and Village Accounts.—The taluk and village accounts are stated to be generally well kept, except in Ganjam and South Arcot where the Collectors are adopting the necessary measures for improving the present state of things. In Ganjam the Collector states that, owing to the incapacity of the classes employed as Curnam, the accurate preparation of the accounts is a very difficult work, and will take much time and patience before matters are on a really satisfactory footing; and in South Arcot much was done in Fusly 1282 towards examining the accounts, and it is hoped that there will be an improvement next year.

82. Sub-Division of Joint liability of Shareholders in the enfranchised whole Inam Villages under G. O., 18th October 1867, No. 2,451.—No application appears to have been made in any District for the subdivision of whole Inam villages with reference to G. O., dated 18th October 1867, No. 2,451, and the Board fear that the order will remain a dead letter for ever. It is impossible to expect any unity of action among the several sharers in an "Agraharam," and it is not to the interest of these sharers, who are

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generally absent from the village, to agree to any such course as that prescribed by the order of Government. The condition of the holders of joint villages is unfortunate. It is not easy to effect sub-divisions owing to accounts of produce not being regularly kept in such villages, and consequently the whole property is often sold for the default of a single shareholder out of many.

83. The Board have not dwelt in this report upon the forest revenue which was placed in their charge for the first time in November 1872, the Collectors not having furnished the necessary returns. It will be duly noticed in the Report for Fusly 1283. A separate Report for the official year 1872-73 has been already forwarded to Government.

Order thereon, 23rd June 1874, No. 770.

THIS Report of the Board of Revenue on the settlement and collections of the revenues of this Presidency for Fusly 1282 (revenue-year ending 30th June 1873) is submitted nearly three months later than the prescribed date,* and the Government must request the Board to avoid such delay in future.

* Para. 1, G. O., dated 11th May 1869, No. 1,313.

2. The gross revenue of the year amounted to Rupees 725,07,746 against Rupees 715,86,020 in the previous year. The increase was Rupees 9,21,726. Compared with the average (Rupees 687,60,464) of the last five years, the revenues show an improvement of Rupees 37,47,282, or nearly 5½ per cent.

3. The total charges of management and collection and other incidental charges amounted to Rupees 59,96,031 against Rupees 59,59,826, showing an increase of Rupees 36,205. The Board remark that the charges include the amounts paid as refunds, and that instructions will be issued to the Collectors for making their returns more correct; but there was an increase of Rupees 90,608 under "Management Charges," while under "Extra Charges" there was a decrease of Rupees 54,403. The Board should have explained the large increase under the first item. On the whole, however, the ratio of expenditure to the gross revenue was 8·2 per cent against 8·3 per cent in Fusly 1281.

4. The financial result of the administration having thus been briefly stated, the Government will now review the details of the Board's Report.

5. *Season.*—The season was on the whole good. The north-east monsoon particularly was heavy, but the unseasonable and heavy downpour in February did great damage to the crops ready for harvest in North Arcot, South Arcot, and Tanjore. The rain-fall in the Malabar District was fair, but the showers having been unseasonable rendered cultivation very unsuccessful.

6. *Sanitary Condition.*—The sanitary condition of the Presidency during the year was not good. The number of deaths in Fusly 1282 was 505,867 against 445,720 in Fusly 1281. Cholera prevailed in an epidemic form only in three northern Districts, and the total number of deaths from this cause was 6,675 against 11,678 in the previous year; but small-pox* and fever contributed chiefly to increase mortality. On the whole, the death-rate in the year under report was 17·07 per mille against 17·38 in Fusly 1281. As there is a separate department to look after the sanitation of the Presidency, it is unnecessary to enter into this subject further here.

	Fusly 1281.	Fusly 1282.
* Small-pox.	29,371	48,921
Fever ...	187,465	225,414

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7. *Prices.*—The following table shows the prices of Fusly 1282 compared with those of the previous five years and the decennial average:—

	First Sort Paddy.			Second Sort Paddy.			Cholum.		
	Price.	Decrease.	Percentage of Decrease.	Price.	Decrease.	Percentage of Decrease.	Price.	Decrease.	Percentage of Decrease.
	RS.			RS.			RS.		
Fusly 1277, per garce ...	183	...	...	164	...	...	209	...	...
Fusly 1278, per garce ...	191	...	...	170	...	...	201	8	4
Fusly 1279, per garce ...	181	10	5	163	7	4	196	5	2
Fusly 1280, per garce ...	146	35	19	131	32	20	166	30	15
Fusly 1281, per garce ...	144	2	1	130	1	1	159	7	4
Fusly 1282, per garce ...	149	...	...	135	...	...	168	...	...
Total...	994	47	...	893	40	...	1,099	50	...
Average...	166	8	5	149	7	4	183	8	4
Compared with decennial Average...	...	38	20	...	34	20	...	51	23

	Cumboo.			Raggy.			Horse-Gram.		
	Price.	Decrease.	Percentage of Decrease.	Price.	Decrease.	Percentage of Decrease.	Price.	Decrease.	Percentage of Decrease.
	RS.			RS.			RS.		
Fusly 1277, per garce ...	191	...	...	202	...	...	233	...	...
Fusly 1278, per garce ...	185	6	3	198	4	2	234	...	...
Fusly 1279, per garce ...	183	2	1	175	23	11	224	10	4
Fusly 1280, per garce ...	140	34	18	143	32	18	185	39	17
Fusly 1281, per garce ...	151	...	...	135	8	6	196	...	...
Fusly 1282, per garce ...	150	1	1	146	...	...	221	...	...
Total...	1,009	43	...	999	67	...	1,293	49	...
Average...	168	7	4	166	11	6	215	8	4
Compared with decennial Average...	...	49	25	...	54	27	...	25	10

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Prices fell considerably in Fusly 1280, but those of 1282 have slightly risen above those of the two previous years. Compared with the decennial average there is a decrease of 20 per cent on paddy and of between 23 and 27 per cent on dry grains, except horse-gram; the decrease on horse-gram was 10 per cent. The Board point out that the ruling prices are much above the commutation rates in the lately settled Districts, and that there is, therefore, a good margin in favor of the ryots in these at least.

8. *Ryots' Holdings.*—The extent of land occupied on ryotwari tenure in all the Districts, except South Canara, was acres 19,742,748, assessed at Rupees 339,41,516, against acres 19,685, 938, assessed at Rupees 339,37,431, in Fusly 1281, showing an increase of acres 56,810, assessed at Rupees 4,085 :—

9. *Ryotwar Settlement.*—The net ryotwar settlement amounted to Rupees 358,38,619 against Rupees 349,85,370. Of the increase of Rupees 8,53,249, only Rupees 4,085 occurs under Holdings, and the largest portion, or Rupees 6,11,363, is the decrease under Remissions deducted from the assessment on actual holdings. The remainder, Rupees 2,37,801, occurs chiefly under second crop assessment, additional assessment, and water-tax. These results and the increase* in the proportion of the holdings actually cultivated indicate the favorable character of the season in Fusly 1282 compared with Fusly 1281—

——	Fusly 1281.	Fusly 1282.
	RS.	RS.
Assessment on actual holdings...	339,37,431	339,41,516
Deduct waste remitted ...	6,13,261	3,56,558
Remainder ...	333,24,170	335,84,958
Add second crop assessment ...	5,77,025	6,75,153
Additional assessment	5,22,251	6,25,255
Water-tax ...	13,47,655	13,83,163
Revenue of South Canara ...	12,75,496	12,76,657
	370,46,597	375,45,186
Deduct Remissions	20,61,227	17,06,567
Net Settlement...	349,85,370	358,88,619

	Dry. Percentage.	Wet. Percentage.	Total.
* Fusly 1281 ...	88·8	92·1	89·5
„ 1282 ...	90·	94·6	90·8

10. The proposal in paragraph 21 of the Board's Proceedings, that all charges on account of water, whether charged at fixed rates or with reference to the difference between wet and dry assessment, should be shown as "Water-tax" instead of under "Additional Assessment," is approved.

11. *Remissions.*—On the whole, there was a decrease of Rupees 6,11,363 under Remissions, and the greater portion of this, or Rupees 5,39,720, occurred under "Waste and Occasional Remissions," which are influenced by the season. The remainder, Rupees 71,643, is the decrease under "Fixed Remissions" and "Deductions from the demand on account of remuneration to village servants, road-cess, &c." chiefly due to the deductions in the preceding year of the merahs or sums due to village servants in the District of Trichinopoly for two years.

12. *Peishcush or Zemindari Revenue.*—The demand on account of peishcush amounted to Rupees 51,16,332 against Rupees 51,29,464 in Fusly 1281. The decrease of Rupees 13,132 is chiefly the result of the deduction of Rupees 13,000 made from the peishcush of the Zemindar of Kalastry on account of the loss sustained by him in consequence of the abolition of the Moturpha tax in his estates both in North Arcot and Nellore Districts.

13. *Shrotriem and Inam Quit-rent.*—The demand under Shrotriem and Inam quit-rent has risen from Rupees 6,39,015 in Fusly 1281 to Rupees 6,42,181 in Fusly 1282, in consequence of the operation of the Inam Rules authorizing the enfranchisement of Inams.

14. *Miscellaneous.*—The demand under "Miscellaneous" amounted to Rupees 39,07,999 against Rupees 37,52,481 in Fusly 1281, and the net increase of Rupees 1,55,518 is the result of a gross increase of Rupees 2,83,544 and a gross decrease of 1,28,026. The increase occurred chiefly (1) under lands cultivated but not included in the Jammahbundy, owing to the commencement of the Settlement earlier than usual in some of the Districts; (2), under rents of islands situated in rivers, in consequence of the islands in the Godavery District having been rented out for larger sums; (3), under grazing-tax or grass rent in the Nellore District; (4), under cultivation of poramboke lands; and (5), under sundry Inams which were charged for excesses in the areas discovered by the survey in Godavery and Nellore Districts. The decrease which occurred chiefly in Malabar and Trichinopoly is owing to the diminished sales of escheated lands in the former District and to the smaller amount of concealed cultivation brought to account in the year in the latter.

15. The total Land-revenue demand amounted to Rupees 455,05,131 against Rs. 445,06,331 in Fusly 1281.

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16. *Special Products.*—There was a decrease in the area under Sugar-cane and an increase under Cotton and Indigo.

	Fusly 1281.	Fusly 1282.
	ACRES.	ACRES.
Sugar-cane.	47,110	46,446
Cotton ...	16,17,083	17,08,275
Indigo ...	3,45,586	4,06,425

These variations do not call for particular remarks. They are dependent more or less on the season and the demand in the market for the products.

17. The demand on account of sundry sources of revenue is shown in the subjoined statement:—

Items.	Fusly 1281.	Fusly 1282.	Difference.
	RS.	RS.	RS.
Abkari	58,23,714	60,22,779	+ 1,99,065
Income-tax	7,24,098	4,95,639	− 2,28,459
License-tax	272	171	− 101
Salt	128,88,940	128,51,911	− 37,029
Sea Customs	29,10,308	28,73,582	− 36,726
Land Customs	2,05,900	1,95,369	− 10,531
Stamps... { Judicial or Court Fees ...	25,16,803	25,40,164	+ 23,361
Stamps... { Non-judicial	16,39,657	16,87,041	+ 47,384
	41,56,460	42,27,205	+ 70,745
Total ...	267,09,692	266,66,656	− 43,036

18. *Abkari.*—The increase of Rs. 1,99,065 under Abkari is chiefly the result of the great competition at the sales of the farms at the commencement of the fusly in those Districts in which the revenue is farmed out at auctions. The excise system was introduced into five Districts* and is on its trial.

* Ganjam.
Vizagapatam.
Chingleput.
South Arcot.
North Arcot.

19. *Income-tax.*—The decrease under Income-tax is the result of the exemption of incomes below Rupees 1,000 from tax by Act VIII of 1872, as well as of the total abolition of the tax from 1st April 1873.

20. *Salt.*—On the whole, there was a decrease of Rs. 37,029 under "Salt."

	RS.
Fusly 1281 ...	128,88,940
" 1282 ...	128,51,911
Decrease...	37,029

The sales under "Home consumption" show an increase of maunds 46,029 in quantity, and of Rupees 96,821 in the revenue. But under "Inland consumption" there is a decrease of maunds 102,936 in in the quantity, and of Rupees 1,24,853 in the revenue. The Board, in paragraph 47 of their Proceedings, attribute this result to temporary causes; but the figures in the subjoined statement show that the present monopoly price of Rupees 2 the Indian maund has checked consumption, and that the recent extensions of the railway have not counteracted the effect of the price introduced in October 1869:—

Fuslies.	Home Consumption.	Inland Consumption.	
	IN. MD.	IN. MD.	
1276 ...	3,411,149	3,584,818	Monopoly price Rs. 1-11-0 the maund throughout each of these years.
1277 ...	3,309,328	3,118,541	
1278 ...	3,456,572	3,305,403	
Average ...	3,392,349	3,336,254	
1280 ...	3,380,653	3,034,397	Monopoly price Rupees 2 the maund throughout each of these years.
1281 ...	3,320,965	3,242,157	
1282 ...	3,366,994	3,139,221	
Average ...	3,356,204	3,138,591	

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21. The total available quantity of salt in the year was Indian maunds 13,807,872; the sales, including wastage written of, amounted to Indian maunds 6,915,910, and the balance left at the close of the fusly was Indian maunds 6,891,962 against Indian maunds 7,904,996 at the commencement of the year. The stock is very low, and it is particularly so in the Districts noted in the subjoined statement. The Board explain that in Chingleput, South Arcot, and Tanjore, the season was very adverse to salt manufacture, and in Tinnevelly the Collector reports that a smaller quantity was manufactured, but why is not stated. The Government trust that the Board keep themselves informed of the progress of manufacture in these Districts, and take timely steps to lay in the usual quantity.

DISTRICTS.	Balance at the commencement of the Year.	Quantity received into store during the Year.	Total.	Sales, &c.	Balance at the close of the Year.
	IN. MD.	IN. MD.	IN. MD.	IN. MD.	IN. MD.
Chingleput ...	2,157,615	685,451	2,843,066	1,562,804	1,280,262
South Arcot ...	456,228	58,811	515,039	391,397	123,642
Tanjore ...	439,570	432,624	872,194	707,508	164,686
Tinnevelly ...	462,157	464,796	926,953	553,627	373,326

22. The total charges of the Salt Department amounted to Rupees 14,15,649, or a little more than 11 per cent on the gross revenue, against Rupees 15,79,800, or 12¼ per cent in Fusly 1281, and the decrease of Rupees 1,64,151 is chiefly the result of the smaller quantity manufactured during the year for reasons already stated. Works of "Petty construction and repairs" have received much attention, and the sum spent under this head amounted to Rupees 1,86,382 against Rupees 1,75,391 in Fusly 1281.

23. The net salt-revenue of the year was Rupees 114,36,977 against Rupees 113,07,393 in Fusly 1281.

24. The total wastage of salt in the year amounted to Indian maunds 313,333-30 against 174,501-35 in Fusly 1281. The large increase, which occurred chiefly in the Districts of Vizagapatam, Chingleput, South Arcot, and Tanjore, is attributed to the heavy rains of 1871 and 1872 and to defective storage in the Chingleput District. Sanction is granted for writing off the wastage. The Government observe that in the other Districts the ratio of the wastage to the contents of the heaps was moderate.

25. *Sea Customs.*—The decrease of Rupees 36,727 under "Sea Customs" is small, and is owing chiefly to the smaller exports of cocoanut oil and pepper from Malabar, to smaller importations of cotton piece-goods and thread in Tinnevelly, and to the falling off in the export trade in paddy in Vizagapatam, Godavery, and South Arcot.

26. *Land Customs.*—The decrease of Rupees 10,531 under "Land Customs" occurred chiefly in South Arcot, and is not explained.

27. *Stamps.*—Under Stamps, there was an increase of Rupees 70,745—Rupees 23,361 under Court Fees and Rupees 47,384 under General and Non-judicial Stamps: the former is the result of a moderate increase in litigation, and the payment of batta for the service of processes in stamps; the latter is owing to the growing prosperity of the country.

28. *Demand, Collection, and Balance of Current Revenue.*—The total demand on account of all sources of revenue amounted to Rupees 721,71,787. Of this, Rupees 672,47,954, or 93·2 per cent, were collected within the fusly, and the balance at the close of the fusly was Rupees 48,92,267, exclusive of remissions under "Abkari" and "Income-tax." This balance was, however, reduced to Rupees 13,86,252, or 1·9 per cent, by subsequent collections up to 31st October 1873. On the whole, the collections were satisfactory, and the explanation given in paragraphs 57 to 62 for the balances is accepted. The balances in the Districts noted in the margin are large. As usual, the arrear in the Chingleput District is heavy, and this, the Board state, is owing to the desire on the part of the Mirassidars to retain more land in their puttahs than they have the

	PER CENT.
Chingleput ...	6
Madura ...	5·12
Salem ...	4·19
Ganjam ...	3·43
North Arcot ...	3·17
Nellore ...	3·13

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means to cultivate efficiently and pay for. The Government will await the explanation of the Collector called for in paragraph 18 of their Proceedings, dated 20th February 1874, No. 232.

29. *Demand, Collection, and Balance of Arrears.*—The entire demand on account of arrears amounted to Rupees 68,95,020, and deducting the collections and remissions up to October 1873 the balance left was Rupees 14,35,489. Of this sum the Board report Rupees 3,60,782 (inclusive of the amount recommended to be written off in the Settlement Report for Fusly 1281, and sanctioned in paragraph 19 of the order of Government, dated 20th February 1874, No. 232) to be irrecoverable. Under the explanation given in paragraphs 66 to 72 of the Board's Report, sanction is now granted for writing off Rupees 1,79,710-10-9.

30. Under the circumstances stated in paragraph 74, sanction is also granted for writing off the sum of Rupees 14,205-3-2 appertaining to the demand of Fusly 1282.

31. Several of the unsettled balances of old date in the Districts of Madura and Kistna, noticed in the Proceedings of Government, dated 20th February 1874, No. 232, paragraph 20, have not been disposed of in Fusly 1282. The balances under Miscellaneous in the Chingleput District are also of old date. The appearance of these sums in the returns for Fusly 1283 will be severely noticed.

32. The extent to which coercive process was used in Fusly 1282 for realizing the revenue is shown in the margin. Although there was a decrease in the number of royts against whom processes were issued and in the value of movable property sold, there was a large increase in the sale of landed property. The amount realized by the sale of lands in the district of Chingleput alone was Rupees 1,06,152, while the average of the other Districts was 10,122. The separate and special report of the Board regarding these sales is now under the consideration of Government, and the subject will not, therefore, be further noticed here.

	Fusly 1281.	Fusly 1282.
Number of ryots against whom processes were issued... ...	2,60,331	2,49,124
Revenue realized by actual sales—	RS.	RS.
(a) of movable property ...	1,90,512	1,44,197
(b) lands ...	2,06,803	3,08,592

33. The taluk and village accounts are stated to be well kept, except in Ganjam and South Arcot, and steps are being taken by the Collectors to improve the existing state of things in those Districts.

(True Extract.)

(Signed) C. G. MASTER,

Acting Secretary to Government.

WATER RATE RULES—KISTNA AND GODAVERY DELTAS.

Proceedings of the Madras Government, Revenue Department, 11th July 1874.

Read the following Proceedings of the Board of Revenue, dated 17th June 1874, No. 1,477:—

Read the following letter from W. S. FOSTER, ESQ., Acting Collector of the Godavery District, to J. GROSE, ESQ., Secretary to the Board of Revenue, dated Cocanada, 29th April 1874, No. 113:—

MY attention was drawn to the severity of the provision in the new Water-tax Rules sanctioned by Government, in regard to the charge for water on sugar-cane and other garden produce paying Rupees 8 an acre. The Rules provide that where a field is very large or where a portion is not irrigable, a sub-division may be made, but that in other cases the whole field being irrigable, the whole should be paid on. The cultivation of sugar-cane is likely to be affected in a great measure if this rule were adopted. There is no question that several of the fields in which sugar-cane is cultivated, are irrigable, and there is no question generally that the area of those fields is not very large, but for the cultivation of the peculiarly expensive crop of sugar-cane, so that sub-dividing fields for the sugar-cane crop is not within the rule. This is one of the special crops whose cultivation we are to encourage, rather than discourage or curtail, and we cannot help allowing it to suffer if the whole field is charged, unless formally sub-divided. The same piece of land is not cultivated every year with this special product, the land becoming poor, and the extent generally cultivated is an acre or two by a well-to-do ryot. Every field, therefore, has to be sub-divided into pieces of 2 or 3 acres, thereby virtually doing away with the usefulness of the original survey, and the number of fields is so large, that it is almost impossible to carry out this measure. I would, therefore, propose that a rule be passed, allowing the Revenue Officers to charge the cultivation of sugar-cane and similar special crops paying 8 Rupees an acre in lots of 2 acres, counting the fractions below 2 acres as 2 full acres. On this subject, I beg to refer the Board to their Proceedings of the 3rd August 1868, No. 5,626, and the correspondence therewith connected.

2. Mr. Horsfall, the late Sub-Collector, also suggests the course I have now recommended, as can be seen from the accompanying copy of his letter of the 30th March 1874, No. 88.

3. I should have proposed this rule when I had sent my remarks on the Draft Water-tax Rules, but I had then proposed that the actually irrigated land should be charged for water

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whatever the crop might be: in this case, the difficulty now complained of could not have appeared.

4. I would propose the rule as follows:—If portions of fields are cultivated with sugar-cane or other crops which pay 8 Rupees per acre for water, water-rate will be charged at the rate of 8 Rupees per acre on the extent cultivated with such crop, and 4 Rupees an acre on the rest of the field.

In calculating the extent cultivated with sugar-cane, &c., every piece of land less than 2 acres will be charged as 2 acres.

ENCLOSURE No. 1.

From J. G. HORSFALL, Esq., Sub-Collector, to W. S. FOSTER, Esq., Acting Collector of the Godavery District, dated Rajahmundry, 30th March 1874, No. 88.

I beg to draw your attention to the following subject:—

Section 4, Rule I of the new Water-tax Rules, contemplates a charge of Rupees 8 an acre for sugar-cane.

2. Section 6 of the same rule directs that ryots taking water for a portion of a field should be charged on the whole unless the sub-division and irrigation of a particular portion has been previously sanctioned by the Collector.

3. This section either renders the sub-division of several survey fields necessary, or curtails the cultivation of sugar-cane, if sub-division is refused.

4. You are aware that a ryot of ordinary circumstances cannot afford to cultivate more than 1 or 2 acres with sugar-cane, and cannot afford to pay water-tax at Rupees 8 an acre on full fields.

5. The same plot which is cultivated with sugar-cane in one year cannot be cultivated with the same crop for at least two succeeding seasons, consequently ryots vary the place of sugar-cane every year and apply for sub-division.

6. On a reference made by me in 1868, the Board authorized the charge of water-tax for sugar-cane on a scale of 2 acres (counting fractions of 2 acres as 2 acres), and I believe that this rule, if re-introduced, will render sub-division of fields unnecessary, and will not obstruct sugar-cane cultivation as the present rule must, as it stands, necessarily do. I would apply the rule to all crops upon which a charge of Rupees 8 per acre is made for water.

(True Copy.)

(Signed) W. S. FOSTER,

Acting Collector.

Submitted for the orders of Government.

2. The Board proposed that ryots taking water for a portion of a field should be charged for that portion only, but Government disapproved and the rule now stands thus:

G. O., dated 16th June 1873, No. 617.

"Ryots taking water for a portion of a field will be charged on the whole unless the sub-division and irrigation of a particular portion has been previously sanctioned by the Collector."

3. Mr. Foster points out that this rule is so harsh with regard to sugar-cane cultivation which pays Rupees 8 an acre and usually covers only a small portion of a field that it must discourage such cultivation.

4. He proposes that there should be a special rule in favor of sugar-cane cultivation providing that when portions of fields are irrigated for this crop water-rate shall be charged only on the extent cultivated, provided that portions less than 2 acres in extent shall be charged as 2 acres.

5. The Board are strongly of opinion that liberality in this matter is expedient both for the people and the State. They would like to see the rule they proposed adopted now, but if this cannot be done, Mr. Foster's rule should certainly be allowed, the 2 acre minimum being reduced to 1 acre. Under the general Water-rate Rules which have been approved by Government the minimum is half an acre.

Order thereon, 11th July 1874, No. 864.

On a reconsideration of the question referred to in paragraph 5, G. O., dated 16th June 1873, No. 617, the Governor in Council approves of a modification of Clause 6, Rule I of the Rules for levying water-rate in the Kistna and Godavery Deltas by the following addition thereto:—

"If portions of fields are cultivated with sugar-cane or other crops which pay Rupees 8 per acre for water, water-rate at Rupees 8 per acre will be charged on the extent cultivated with such crops, half an acre being the minimum extent recognized for the purpose of this Rule."

2. With respect to the rule as originally proposed by the Board and negatived in paragraph 5, G. O., dated 16th June 1873, No. 617, the Governor in Council desires that if the Board are still in favor of a further relaxation they will report in full their reasons after weighing the several disadvantages which such a course would involve.

(True Extract.)

(Signed) C. G. MASTER,

Acting Secretary to Government.

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Mr. Hannyngton's Report on the Anamallay Hills—Coimbatore District.

Proceedings of the Madras Government, Revenue Department, 3rd August 1874.

Read the following papers :—

From J. C. HANNYNGTON, Esq., M.C.S., to C. G. MASTER, Esq., Acting Secretary to Government, Revenue Department, dated Salem, 23rd June 1874 :—

Having visited the Anamallay Hills during the late recess of my Court, and having, during my leisure hours, jotted down notes of such points as struck me as being of interest, and having also surveyed and sketched a portion of the upper plateau, I think that perhaps the results of my trip may not be without interest to Government.

2. I have, therefore, the honor to forward herewith eighteen photographs, being three copies each of six views, together with a report, and also a map of Michael's Valley and part of the adjacent country, for the kind acceptance of Government.

3. Being myself a very indifferent draughtsman, I have had the map tolerably copied on a reduced scale of 2,000 yards to the inch. I however also forward my own rough sketch, which is somewhat more accurate, together with a plan on the same scale showing the principal triangles from which the map is worked, and any intelligent draughtsman can from these construct a map to any desired scale.

4. I do not, however, claim extreme accuracy for my map, the survey having been carried out with a rather coarse instrument; and I would suggest that if any thing be done with the report and map, that the most the map is worth in its unfinished state, is to be copied on the scale, say, of a mile to the inch in a clear bold manner, and have the copy photographed.

5. I had intended sketching the whole of the upper plateau, but was prevented by various circumstances; perhaps, next year I may be able to complete the sketch; but considering the uncertainty of all human affairs, I have considered it best to send in the report and map, as it stands, in its unfinished condition.

Enclosure No. 1.

Early in the year 1863, having obtained three months' leave, I was advised by Colonel Michael to explore the higher ranges of the Anamallays for sporting purposes.

2. Colonel Michael proposed to me that I should essay a route which had not previously been tried, viz., by Dhullee, Poondy, and Appia mountain.

3. I accomplished the ascent to Michael's Valley easily in three marches from Dhullee, and was subsequently joined by Captains Michael and Hill, who, however, remained but a short time owing to the illness of Captain Hill.

4. The general results of Captain Michael's visit on this occasion are embodied in his report to Government, dated 15th April 1863. Immediately after this trip, Captain Michael was attacked with a serious illness, and Captain Hill died; but the illness of neither of these gentlemen was attributable to their visit to the Anamallays, yet the accidental incident served to give to the upper ranges an evil character for unhealthiness which belongs by right to the lower part of the hills only.

5. In 1865, Colonel Douglas Hamilton and Mr. Faulkner (17th Lancers) visited the upper ranges, and remained there about two months; the account of this trip is contained in Colonel Hamilton's interesting report, dated 18th December 1865.

6. Several parties have since visited the upper plateau, but, owing to the difficulty of access and the bad odor for fever that the name "Anamallay" has obtained, this truly magnificent country has not received the attention it deserves.

7. The obscurity in which the spot is buried is, I doubt not, in some measure owing to the inaccuracy of the existing maps, an examination of which would lead to no idea of the existence of such an extensive and salubrious plateau.

8. In view, therefore, partly to the enjoyment of the loveliest scenery and most delicious climate in South India, and partly to render the same pleasures available to others, I resolved to spend a portion of the recess of 1874 in exploring and perhaps mapping out the plateau; and though, owing to very unfavorable weather, a strained ankle, and other circumstances, my explorations were curtailed, still the results, as far as they go, may be of use to others who may be led to follow and proceed beyond my footsteps.

9. It is needless to say that preparations must be made beforehand. Coolies from the low country are very unwilling to go up these hills, and though I did, on this occasion, obtain the services of five low-country volunteers, the unfortunately stormy weather soon drove my allies to the plains again.

10. I ascended on this occasion by the old route *viâ* Appia Mallay. The ascent by this route has been so well and carefully described

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by Colonels Michael and Hamilton that it needs but brief notice.

11. I reached the foot of the Poondy Ghaut (some six miles from Dhullee) about midnight, and at early dawn on the 23rd April commenced the ascent. The ghaut is impracticable for horses or laden bullocks.

12. It is well to remember that the Puliars, who reside at Mavadop, Poondy, and Kurumallay, and who are the only available coolies, carry their burdens on their backs, not on their heads, and loads should be arranged accordingly. As the ascent is, moreover, steep, and the men not very strong, no load should much exceed 35lbs.

13. The Puliars have brought to perfection the art of making language,— a vehicle whereby to conceal their thoughts.

14. The steep ascent to the plateau on which the village of Poondy stands is about 1,500 feet in two miles; there is then a gentle rise for about three miles to the foot of Appia ridge, and then an abrupt rise to the top of the ridge.

15. The view of Kokanamallay from the plateau is very beautiful (Photograph No. 1).

16. The plateau of Poondy is exceedingly dangerous as regards fever (the elevation being about 2,850 feet), and servants or low-country coolies should on no account be allowed to sleep at Poondy, though they will invariably petition to be allowed to do so. Appia ridge is, however, I believe perfectly safe. The only case of sickness amongst my followers was that of a man who, in disobedience to orders, left Appia ridge and slept two nights in Poondy. He contracted a very severe fever.

17. Good drinking water is to be had on Appia ridge at all seasons; there are two or three springs. No rain had fallen for about six months prior to my arrival, nevertheless there was sufficient, running, pure water.

18. The spot makes a very fair camping ground, being sheltered and tolerably level.

19. The height is about 3,940 feet above the sea (Barometer 25·84), and the Thermometer read on this occasion, in the shade, noon 82°, 9 P.M. 79°, 6 A.M. 67°,—a very delightful and equable temperature.

20. The view of the Toracadavu Valley from the saddle of the ridge would alone re-pay the trouble of the journey from Coimbatore. To the immediate left lies Appia Mallay; next comes a hill called Parienga; beyond this towers the lofty form of Kokanamallay,—one mass of precipices and quaintly shaped peaks; in front, due south, in the extreme distance, is the green summit of Shadiandy peak; on the right of the valley towers the huge grey rock of Tangachy attended by her sister the Akka; towards the west, and behind these, stretches the long grassy back of Poliary.

21 Much of the fine forest of the valley has been destroyed by the erratic and destructive cultivation of the Muduvers.

22. By making an early start from Appia ridge, the fatigue of the next march is much reduced, as the path, which runs along the eastern side of the valley, is shaded by the mountains from the morning sun.

23. The view of Tangachy and Akka in the morning light, with the light mist touching their foreheads and their feet hidden in the dark-forest, struck me as very beautiful. Photograph No. 2 gives a very faint idea of the scene.

24. The first part of the walk is annoying, being up and down over a series of ridges and valleys; but after about four or five miles the path enters the forest, and the ascent is more equable. The Toracadavu river is crossed at an elevation of 4,600 feet, and a quarter of an hour's walk leads to the open grass, when half an hour more up a very steep incline brings one to a stream called Seringanacolum. Here there is a fair camping ground, being the spot where the expedition of 1858 under Dr. Cleghorn encamped.

25. For bad weather, however, it is worth knowing that there is a cave and tolerably snug camping ground in the sholah at the back of the usual camp. There are also plenty of leeches.

26. Seringanacolum is situated on the slope of Poliary at a height of 5,760 feet (Baro. 24·15), and commands a lovely view of the valley looking down towards the north.

27. It is easy for a good walker to reach Michael's Valley in one march from Appia ridge, but, on the whole, it is more comfortable to halt at Seringanacolum on account of one's coolies.

28. The next morning's march takes one easily to Michael's Valley. The route is through open grass for about two miles (the lower path being the best) to Kutherikutti ridge, and thence about four miles through undulating forest.

29. No mistake can be made as to the usual place for camping, which is certainly the most convenient spot for head-quarters to travellers by this route. It is well sheltered, well watered, and there is a very good cave and camping ground for one's followers in the sholah close at hand.

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30. The Australian trees (Robusta) and some apple and pear trees planted by Colonel Hamilton and other visitors were a few days before my arrival carefully eradicated by an elephant, who seemed to have fully recognized them to be foreigners, and resented their presence as an intrusion of civilization upon his domain!

31. The camp is situated at the tail of the northern stream of Michael's Valley, and is separated from the main valley by a thin strip of forest and a low ridge of hills. The height is about 6,060 feet (Baro. 23·89). The climate is cooler than the elevation would lead one to expect.

32. On the 28th February 1863, the water in a brass basin outside my tent and at a height of two feet from the ground froze completely over. The mean temperatures in the shade from 26th April to 5th May 1874 were—

Mean maximum	... ...	76°·2
Mean minimum	... ...	53°·4

The temperatures at the Wellington Observatory for the same period were—

Mean maximum	... ...	73°·7
Mean minimum	... ...	57°·1

33. The elevation of the two observatories (Wellington and Conalaur) being the same as nearly as possible, it will be remarked that, although the mean temperature is about equal, the extremes are greater at Conalaur. This may partly, but not entirely, be accounted for by the observations at Conalaur being taken in a valley.

34. The Photograph No. 3 taken from Palmallay (best known to Europeans as Binocular Hill) gives a very fair idea of Michael's Valley.

35. The hill at the head of the valley is Aneitallei or the Elephant's Head. Photographs Nos. 4 and 5 are taken from points near the foot of Aneitallei.

36. From the foot of this hill rise two streams, one of which meanders round the southern valley, and the other flows in a more direct line past the camp, and is known by the name Conalaur. These two streams unite at the foot of Palmallay in the midst of dense forest, and form a beautiful waterfall. The stream thence takes, I believe, the name of "Torakadavu."

37. An elephant path (which may be faintly traced in Photograph No. 3) leads along the ridge dividing the two valleys from the foot of Palmally to the very head of the valley. The gradient is very easy, and the path so good that in its present state it might be galloped over.

38. There is no good path up the valley in which the camp is situated.

39. The southern valley is wonderfully level all along the borders of the stream. The stream is bordered by marsh, and the fall in two miles does not exceed 30 feet. It would be a capital spot for an amateur engineer to silt a bund across, at his own expense.

40. The greater part of the valley consists of a series of rolling hills, with a few small sholahs here and there.

41. Palmallay, which is within half an hour's walk of camp, is well worth a visit, not merely on account of the views from its summit, but also on account of some very curious natural caves which exist in the face of its rocky peak. Two of these which I failed to reach may be seen from the camp with the aid of a telescope. They appear as round holes in the face of the rock. One which is on the south face of the hill is easily reached, and is used as a shooting lodge by the Muduvers. It forms a very snug habitation, and is depicted in Photograph No. 6. In the foreground of this picture may be seen the horns of a good buck Ibex (*C. Hylocria*), and it is a curious fact that the horns found about the old encampments are almost always those of old bucks. This may be accounted for by the method in which the Ibex are pursued; the herds being driven into set nooses as described by Colonel Hamilton, and the old bucks being the most wary, are the first to make off, and are consequently the first to be caught. Victims to their own caution!

42. There is a good deal of fine country worth exploring on the western slopes of Poliary. On the whole, the best way to ascend Poliary from camp is to go up the elephant path I have before alluded to as going up the ridge dividing Michael's Valley, until opposite the waterfall shown in the map, then strike down into the northern valley, and proceed up the stream and past the cave (also marked in the map).

43. This cave is exceedingly comfortable and convenient; it contains a spring of exquisitely pure water, and one can put up in it for a night, and thence explore Akka, Tangachy, and the Poliary slopes without the trouble and exertion of carrying tents or of toiling up and down the steep slope of Poliary.

44. The honey to the west of Michael's Valley and on the western slopes of Poliary is collected by the Mavadop Puliars. The right of collecting the honey in the valley and in the jungles to the east is held by the Poondy and Kurumallay Puliars. A path, which runs along the ridge of Poliary, leads to Mavadop and, I presume, to the Coffee estates on Punachymallay.

45. There is evidently good camping ground on the slopes, and the Mavadop men informed

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me that there is a cave which they frequent in their honey-gathering expeditions.

46. The path which leads to Kumaricul, which is referred to in Colonel Michael's report, is indicated with sufficient accuracy in the map. The same path leads to Kathumallay (Windy Mountain) and Aneimudi.

47. Continual rain and the cyclone of the 6th May, which severely tested the endurance of my little shikar tent, prevented my exploring beyond Kumaricul, and on the 12th May I was compelled by various circumstances to start on the downward journey. I sent the greater part of my kit by a short route past Palmallay and through the forest to Viramputti, whilst I myself went round by Shadiandi Hill.

48. The best and easiest route is that which is marked on the map as "uncertain." There is, however, but little doubt in my mind, from the information I extracted from the Puliars, that this uncertain route might be traversed on horseback.

49. The lower route which I adopted is in parts somewhat steep, and finally joins the short route, *viâ* Palmallay, not far from a camp of the Puliars called Viramputti. There is no cave at Viramputti, and it is necessary to pitch tents or build huts.

50. By going the upper route, however, one is led to an excellent cave, which I have marked on the map; but this cave is not large enough for oneself and *many* followers.

51. By a stream not far from this cave is a spot held sacred by the Muduvers. The only things to be seen are some small iron tridents stuck upright, and a few pieces of iron in the shape of spear heads and knives laid before these, apparently as offerings. I found a similar shrine close to the cave on Poliary, and another also on Poliary, immediately opposite the Akka.

52. Viramputti and the cave, which is about a mile east of Viramputti, are situated on a grassy plateau of moderate extent called by the Puliars by the general name of Poinkuttimallay, the general elevation being about 7,000 feet.

53. An exceedingly easy path leads from this to Melkurumallay, a distance of about six miles. There is only one portion of this path, extending for a quarter of a mile, which is inaccessible to ponies. This quarter of a mile is, however, very steep and precipitous indeed.

54. I am assured by the Puliars that there is a circuitous route through the forest to the west by which a pony might be taken, and if a pony could be taken to Kurumallay this route would be well worth exploring.

55. Melkurumallay may, I think, be considered a safe halting place, the height being 4,340 feet (Baro. 25·45). There is excellent camping ground and a spacious cave. The ground is open and well watered.

56. Keelkurumallay, which is a considerable Puliar village, is about two miles from Melkurumallay, is quite a thousand feet lower, and is not at all safe from fever.

57. A steep ghaut impassable for iron-shod ponies leads in some five miles to the pretty Puliar temple called Thirumurthy Coil. The temple is quite in the plains, on a level with and but five miles distant from Dhullee, to which it is connected by a capital bandy-track.

58. I strongly recommend this new route by which I descended to future visitors of the higher ranges. In the first place, the ascent is easier, and the first march takes one to better and more convenient camping ground, namely, Melkurumallay. Then the second march takes one in two and-a-half or three hours' easy walking to a fine open plateau at a height of 7,000 feet. A good walker could easily reach Shadiandimallay in one march from Melkurumallay, and thus at once reach, in fact, the centre of the Anamallay plateau.

59. I have no doubt that any one who tries this new route will prefer it to the other. To those who desire especially to visit the Aneimudi plateau mentioned by Colonel Hamilton this new route is in every respect preferable. The scenery is fully as beautiful, if not so grand, as in the other route. Moreover, the road between Dhullee and Kurumallay is full of interest. The tombs of the Naicks near Dhullee and the Thirumurthy Coil are well worth some time spent in examining them.

60. With reference to the map which accompanies this sketch, I think it may be accepted as fairly correct in detail. I do not profess it to be full in detail, but it is full enough and accurate enough for all present practical purposes. It is, however, the maiden effort of an amateur, and the scientific may regard it as the innocent recreation of an Indian Judge! Probably, the distant points, such as Kumaricul, Kathumullay, and Poinkutti, are *within* 300 yards of truth; the nearer points about the valley must be very nearly correct.

61. The names have been entered as pronounced by the Puliars, and certainly it is difficult to recognize some of them as compared with the names entered in the Ordnance Map. Many of the names in the Ordnance Map I could not identify at all. What is entered in the Ordnance Map as Culadacuttimallay is known to the Puliars as Karutheikutti, "the Hill of the tied Ass;" Kauthumallay is Káthumallay, "the Windy Hill."

62. The Puliars say that the names of Kutherikutti ridge and Karutheikutti Hill are

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derived from the fact that in days gone by, certain Mahrattas, returning from a marauding expedition across these hills, found themselves unable to take the horses and donkeys which formed part of their booty further than the edge of the ghauts, and therefore abandoned them on the hills, and that the above-named spots are the sites of their encampments. I think, however, these ingenious gentlemen (the Puliars) told a Mr. Payne a very different story some years back, to the effect that the names were derived from the fact that the animals had been sacrificed on those spots, having been carried up the hills for the purpose.

63. In conclusion, I would remark that, although there is all about the plateau an immense extent of magnificent forest land, well adapted for both Tea and Coffee cultivation, yet the difficulty of access and the scarcity of labor would probably lead to the certain ruin of the pioneers of planting, and considering the great extent of forest which still remains to be opened out in the vicinity of the Ponachy estates, to which Government has opened a road at considerable expense, I should much doubt the advisability of encouraging planters to settle on these hills, whilst there is still ample forest for all possible requirements in more accessible localities.

64. Lovers of scenery and exploration will, however, find here much that will re-pay the trouble of the trip, and the sportsman will find sufficient game (Bison and Ibex only) to occupy him.

65. Is it too much to ask of any who may avail themselves of the information given in this sketch that they will refrain from murdering the game? If the sportsman requires food for himself or his followers, let him by all means shoot whatever he can get; but that I should introduce to this lovely country such a class of sportsmen (?) as have in a few short years, with yelping curs and armed coolies, destroyed the sport of the Nilgiris, by beating the sholahs and wantonly killing every four-footed animal, be it gravid hind or sucking calf, would be to me a source of continual regret.

The photographs referred to are in the hands of Mr. Kenrick of Ootacamund, from whom copies can be obtained. I beg to state that I have no pecuniary interest whatever in them.

APPENDIX No. 1.

Thermometric Register, Michael's Valley, from April 26th to May 5th, 1874.

Date.	Maximum.	Minimum.	——
April 26th	72·3	54·6	Fine.
„ 27th	76·6	52·0	Morning fine; afternoon rain.
„ 28th	77·9	54·2	Do. do.
„ 29th	80·0	50·0	Do. Heavy rain.
„ 30th	76·0	54·0	Cloudy; fine.
May 1st	75·0	52·0	Do. afternoon rain.
„ 2nd	75·5	50·0	Do. fine.
„ 3rd	74·6	54·2	Do. do.
„ 4th	76·4	57·0	Do.
„ 5th	76·0	56·0	Do. rain and wind.
Mean	76·2	53·4	Mean temperature 64·8.
May 6th	55·0	52·0	Heavy gale with rain.

Thermometers freely exposed in shade five feet from the ground and under thatched roof.

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APPENDIX No. 2.

Approximate Heights of some Peaks of the Anamallay Hills.

Poliary	8,147 feet	(Baro. 22·13)
Aneitallei	7,072 „	(„ 23·02)
Karutheikutti	7,240 „	(„ 22·88)
Kalar	7,491 „	(„ 22·67)
Shadiandy	7,360 „	(„ 22·77)
Poinkutti	7,210 „	(„ 22·90)
Upper Kurumallay	4,340 „	(„ 25·45)
Bottom of Michael's Valley	6,060 „	(„ 23·89)
Top of Michael's Valley	6,200 „	

The heights are roughly estimated. A mean of Barometric readings was taken whenever practicable. The Aneroid Barometer employed was a very good instrument by Elliott, Brothers, and was set by the Madras Observatory Standard. I took as my guide Airey's Tables calculated from a sea-level with Barometer at 31·00.

Taking the mean of Madras Barometer to be 29·80, this would give a height according to Airey's Tables of about 1,070 feet, which I take roughly to be about 1,040 feet above truth.

I have, therefore, simply deducted 1,040 feet from every observation.

Thus: Mean of observations Conalaur camp, Barometer 23·89.

Height according to Airey's Tables	7100
Deduct	1040
Height of camp	=6060

This is no doubt a rough and ready way of calculation which may amuse the scientific; but to show that it is probably not very far from truth, I give the result of the observation of a known point by the same Barometer—

Dodabet—Mean of observations	21·685
Height by Airey's Table	9740
	—1040
Height of Dodabet	=8700

It is interesting to note, in connection with this, the result of some boiling point observations of the same station, the height of the lower station being determined as above by the Aneroid.

Dodabet—Boiling point (mean of six observations) ... 196°·14, Thermo. 62°
Velamhoondy ... ... 209°·12, Thermo. 85°

Velamhoondy Baro. 28·72 height		=	1040 feet.
Dodabet—Boiling point ...	196°·14, Thermo. 62°	=	8627 feet.
Velamhoondy— Do.	209°·12, Thermo. 85°	=	1576
	2)147		7051
	Mean = 73° = factor		1084
			28204
			56408
			70510
			7643·284
Add correction for 8,000 feet		=	+23
Difference between stations		=	7666
+ height of Velamhoondy			1040
			8706 = height of Dodabet above the sea.

The height of Dodabet is entered in the maps as 8,642 or 8,728, the latter being supposed to be the more correct.

Again another example:—

Elk Hill ... ... Baro. 22·165	= 8105
By the map	= 8090

I think these examples are sufficient to show that the heights as estimated by me are probably not very far out.

(Initialled) J. C. H.

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Chief Engineer's Memorandum.

I AM of opinion that it will detract greatly from such value as this paper may have if it be not accompanied by the map, which I would have copied on a scale of 2 miles=1 inch, in order that it may agree with the scale of the printed map accompanying Captain Michael's Report of 1863, which it will supersede. I would leave it to the Revenue Survey Department to make the reduction; and the paper of triangulations should be recorded in that department. Mr. Hannyngton hints at an intention of exploring the high range and plateau to the south of Michael's Valley on a future occasion; and if he were to extend his survey over that tract also, it would not fail to be of general use hereafter.

2. I trust that future explorers of the Anamallays will avail themselves of the route from Coimbatore *viâ* Polachy and the village of Anamallay whence a made-road is under construction to the top of the Punachy Ghaut. It will be rideable in the course of this year; and the rest of the route to Michael's Valley along the upper ravine of the Torakadavoo should be much more practicable than any of the routes from Dhullee, which have to surmount the high ridges bordering that Ravine before they drop into it. The route I recommend is that along which the future high road to the Anamallay high ranges *must* run.

3. I note that the Karutheikutti Hill of Mr. Hannyngton's map coincides with the Kardyvara of the printed map (not with the Culdacuttimallay as he supposed). It may be well to note the other equivalents of the two maps, as far as I can make them out. The list will be useful if the new map is not printed.

Poliary	... =	Tunakkamallay.
South Poliary	... =	Culadacuttimallay.
Palmallay	... =	Varacolumkoond.
Ancitallei	... =	Cootichipadum.
Kalar	... =	Payratmallay.
Virampntti	... =	Jenaulmallay.

Shadiandy must be the unnamed peak marked on the printed map immediately above the letter *c* of the word coond (Varacolum).

(Signed) G. W. WALKER, COL., R. E.,
Chief Engineer, P. W. D.

OOTACAMUND, 21*st July* 1874.

Photograph No. III, with the map, and Mr. Hannyngton's description, combine to give a perfect idea of Michael's Valley, even to one who has never seen it.

(Initialled) G. W. W.

Order thereon, 3rd August 1874, No. 967.

The Government are much obliged to Mr. Hannyngton for his interesting report, which will be printed and laid on the Editors' table.

2. The map and accompanying papers will be sent to the Revenue Survey Department for the preparation of a map on the reduced scale indicated in the Chief Engineer's Memorandum and for record in its Office.

(True Extract.)
(Signed) C. G. MASTER,
Acting Secretary to Government.

MISCELLANEOUS.

TOBACCO—ITS HISTORY AND CULTIVATION.*

(*Concluded from page* 352.)

IX.—CLIMATE.

Tobacco thrives best in a warm moist climate, and the occurrence of a few showers of rain, after the plants have established themselves after transplantation, as also heavy dews at night, add to their vigour. Frost destroys the plants, and the cold north-east winds are extremely inimical to their health; they are soon blighted by them, unless protected by a close lofty hedge or situated in a sheltered locality.

1. *Culture.*—From what has already been written, it will be seen that the tobacco forms a crop of four months, and that, owing to the minuteness of the seeds and the extreme delicacy of the first sprouts, the plants require to be raised in nursery beds. This is a universal practice in the culture of tobacco, whether grown in America, Australia, Persia, or India. When the plants are sufficiently grown, and are from five to six inches in height, and have thrown out from six to eight leaves, they should be transplanted. The grand secret in the culture of tobacco, whether in first raising it in nursery beds, or subsequently maturing the leaves out in the fields, consists in the preparation of the soil, enriching it with manure containing the necessary elements required by the plants, and in keeping the ground clean and sweet and thoroughly free from weeds. It will be seen from the descriptions given above, that there is not much difference in the mode of culture pursued in different countries. Of course, the plant may thrive in one locality better than in another, and may also attain a greater richness and perfection, which will, in a great measure, depend upon the soil and climate.

Soil.—The best soil for the cultivation of tobacco is a dark grey loam, and the silt or alluvium deposit from streams and tanks is greatly appreciated for the purpose; in conse-

* By Surgeon-Major JOHN SHORTT, M.D., F.L.S., &c., Superintendent-General, Vaccination, Madras.

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quence of which, in most districts, river banks and islands formed by the alluvium are preferred, as they abound in the necessary vegetable and mineral ingredients required for the growth and nourishment of the tobacco plant. The land should be freely ploughed or be turned up by the mamooty, so as to expose every part of it to the action of the sun and air; and, where feasible, after being broken up, should be allowed to lie fallow for a season. The soil should be loose and friable for nursery beds as well as for the fields in which they are to be subsequently transplanted out.

2. For nurseries the plots should be freely ploughed up to a depth of twelve or sixteen inches, and be squared into beds of four by six or eight feet, the clods crushed and the surface levelled smooth, and channels formed to facilitate irrigation. The transplanting ground should also receive the same attention.

3. *Manure.*—The best manure to use is equal parts of wood-ashes and good farm or fold yard manure; if preferable, artificial manures may be used, and the composition given in Part VIII of this Essay* is well adapted for the purpose, and will furnish the required materials for the successful growth of the plants. Each acre should receive eight to ten tons of the mixed manure, and the same should be evenly scattered over the ground and be ploughed into the soil as soon after as possible.

4. *Cost.*—The average cost of an acre may be set down at 50 Rupees, distributed as follows:—

	RS.
Ploughing	14
Watering, weeding, &c. ...	15
Land rent	5
Contingencies	16
Total...	50

5. The produce of an acre in an average season is about 1,500 pounds of tobacco, the price varying according to the quality; but estimating the crop at the low rate of 100 Rupees, the result will be a clear profit of 50 Rupees, or cent per cent on the outlay: from this it will be seen that tobacco is a very profitable investment.

6. *Seeds.*—The seed should be of the best description procurable, and the produce of the first crop. After being well dried and freed of foreign particles, the seed should be mixed with an equal proportion of wood-ashes or fine sifted soil, to enable the sower to scatter the seeds evenly over the beds broadcast; after which the beds should be lightly scattered with a hand-hoe or be dusted over with fine pulverized manure, so as to cover in the seeds; and the seed beds should be irrigated for the first time with a watering pot having a fine rose; after which the usual method of channel irrigation may be pursued. The seed beds should be covered over with straw or cut bushes from three to eight days, to be removed as soon as the seeds begin to sprout. Should the seedlings appear much crowded, they should be carefully pricked out; and, in the course of two or three weeks, as they put out from three to six leaves, they will be ready for being lifted out into the field.

7. The ground or soil into which the plants are transferred, after being well prepared, is laid out differently in the several districts: in some, they are simply levelled flat and the plants are put down in rows two feet apart either way and watered by hand from a chatty for a few days till they become established; after which they are treated as dry cultivation and left dependent on the seasonal showers of rain and the fall of night dews till ready to be harvested. This is the case in all the Northern and Ceded Districts; but in other districts, the ground is squared into beds or into parallel trenches, two or three feet apart, and these beds are flooded by channels from wells, brooks, or other water reservoirs, either before or after the plants are transplanted out, and the watering is continued once in every three or five days, according to the season, till the crop is ready to be harvested, and also immediately before the plants are cut down, so as to render them succulent. In this respect, every cultivator has to make his own arrangements, so as to agree with the varying conditions of the soil, climate, and season of the several districts. No rule can be laid down, but it must be left to each cultivator to act according to the requirements of the particular locality. The same remark is applicable to sowing: for, in those districts which are subject to the south-west monsoon, the sowing season begins as early as June, and is continued up to August, and the crop is harvested from October to December. On the contrary, in the districts subject to the influence of the north-east monsoon, the sowing commences in October and ends in November; and the crop is gathered in from February to March.

8. Careful attention should now be given to the plantation. From the time the plants have established themselves after being put out, they should be examined daily in the mornings, to remove any caterpillars that may be found on them: these should be carefully picked out by hand and destroyed on the spot; at the same time, all side shoots or suckers should be broken off to enable the plant to attain vigor and grow up straight and strong; and, on its attaining from two-and-half to three feet, and containing from ten to sixteen leaves, the tops of the plants should be pinched off to stop their growth further and prevent them from flowering. The number of leaves left should vary with the size and vigor of each individual

* See page 349.

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plant, but they should at no time exceed sixteen. The plantation should be scrupulously freed from weeds, the soil kept loose, and the stems of the plants be well earthed up frequently, care being taken to make the stand of plants as complete as possible. As soon as a plant has died off, or has become injured, it should be immediately replaced by one from the nursery, where all superfluous plants should be retained for six weeks or two months after transplantation, to fill up vacancies that may occur subsequently.

9. Tobacco, as already stated, takes about four months to harvest from the time of sowing. As soon as the leaves show a pale green or slightly yellowish color, they are ready for the sickle: the leaves will then emit a strong mawkish or sickly odour and feel rough and somewhat brittle to the touch, the lamina readily breaking in two when doubled.

Harvesting.—Having decided to gather in the crop, the plants should be cut down at between two and three inches above the soil, and be allowed to lie on the field to wither and become pliant till the next morning. Should they not then be sufficiently supple, they may be allowed to remain on the field for another twenty-four hours, when they should be removed and have the stalk end pierced with a hole, through which a cord is strung, in order that the plants may be hung up in the shade to dry for a week or ten days, till the stalks begin to dry, when they should be tied into bundles of half-a-dozen stalks each; and, some straw having been spread on the floor, they should be stacked into a heap, a portion having the stalk end resting on the ground, and the rest reversed the other way; the whole covered with straw and weighted with stones, and allowed so to remain from 36 to 48 hours to promote fermentation. The heat and moisture set up a slow process of fermentation, and a thermometer should be invariably used so as not to allow the heat to exceed 98° Farenheit. The heat should be maintained at the same temperature for three or four days, when the stack should be opened out; and, after exposure to the air for a few hours, the plants should be again restacked in the opposite way, so as to bring every part of the stalks and leaves under the fermentative process. The next day, on the temperature reaching 98°, the stack should be unpacked, and the bundles be taken up and hung in the shade exposed to a free current of air for 48 hours; when they should again be restacked into a heap for about 24 hours till they attain the usual temperature of 98°, and be so maintained for three, four, or five days. This stacking, unstacking, and exposure to the air should be carried out on four separate occasions during the month in order that the tobacco be cured. The temperature should on no occasion exceed 98° Farenheit. The leaves should now be stripped off the stalks, and sorted and tied into bundles of twenty-five each. The tobacco will have attained a light brown color; but should the temperature exceed 98° degrees, it takes a dark brown color, and has a strong, rank ammoniacal smell, and possesses the *Karum** which the natives look for and appreciate, but which is so much disliked by Europeans. The tobacco is now wrapt in gunny sheets, with a view to preserve its moisture; but, should it become too dry, to prevent it from becoming brittle, it is sprinkled over with a decoction prepared from the leaf stalks or with a solution of jaggery and water. This is actually necessary in some districts to keep the tobacco moist, and to prevent it from crumbling to powder when transported from one district to another. The object of the sweating or fermentative process consists in the promotion of fermentation by decomposition of the albuminous constituents of the leaves: this, aided by heat and moisture, yields carbonate of ammonia. The organic salts are next converted into carbonates, and the lignin is the last to undergo decomposition. It becomes friable and yields ulmic and a little acetic acid which gives color to the tobacco. Nearly two thirds of the nicotin disappears during the process, being either decomposed or volatalised by the aid of the carbonate of ammonia; moreover, in the fresh plant, the nicotin is found in the state of a salt (malate) insoluble in ether; in the fermented plant, it is found chiefly in the state of acetate or subacetate, when it is soluble in ether; but the true secret is that, by the process of fermentation and subsequent exposure to air, the leaves of the tobacco undergo a slow process of oxydation, by the carbon and hydrogen of the leaves being converted into water, carbonic acid, and ammonia similar to the process, termed by Liebeg, *Eremacauses*, from the Greek, signifying slow combustion; but if the fermentation be carried to excess, putrifaction begins, breaking up the constituents into other compounds previous to oxydation; and, as is well known, fermentation is a process by which organic substances resolve themselves into simple compounds preparatory to their resolution into water, carbonic acid, and ammonia.

As regards the manufacture of tobacco, no account ever so clear will make up for a practical knowledge of the subject. Practical experience is chiefly necessary. The native ryot does not use a thermometer and is solely guided by experience: he generally overdoes the thing, more frequently perhaps, as the natives prefer a strong tobacco; and, on that account, the native manufacturer carries the fermentative process to excess. The temperature should, when curing for the European market, be invariably guided by a thermometer.

We shall now review the various methods of curing tobacco by Europeans and Natives in different parts of the world.

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* Pungency.

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X.—Preparation of Tobacco.

We have now to consider the preparation of what is known in the "market" as the raw or cured tobacco. In carrying out the process of preparation, much difference exists in the various tobacco-growing countries. This difference, taken in connection with the different climates, in which the process is carried on, causes a difference in the flavour, which greatly depends on the mode of curing. Good tobacco, according to Dr. Royle, as it occurs in commerce, "is of a yellowish brown color, soft and pliable, a little clammy, with something of a honey smell mixed with a narcotic odour; the latter is, however, not obvious in fresh leaves." The taste is bitter, acrid, and nauseous. That the tobacco may obtain this state, much manipulation is necessary, and no rules ever so succinct can make up for a deficiency of practical knowledge; and great forethough and decision will be necessary to modify the process, so as to adapt it to circumstances suited to the locality in which it may be grown.

A—Preparation in America.—In Virginia, the leaves are dried in log-huts, from the roof of which they are suspended; and, when the weather is wet, charcoal fires are lighted and the stem is dried by the smoke, and mouldiness is thus prevented. After hanging for three or four weeks, the plants are, when dry, removed and carefully packed on the dry floor to preserve them from the frost. Should the weather prove very wet they are hung up several times, smoked with a charcoal fire, and replaced in bulk. Lastly, in the month of May they are hung up and so continue till a warm moist day occurs, when they are taken down, and the leaves being stripped off the stalks, are tied in bundles of six or eight in each, with a leaf binding them together, and are thus packed carefully into hogsheads; the butt end of the tobacco touching the cask, and the points directed inwards to the centre. Smoking is injurious, and if the season be sufficiently dry and warm, it is better to cure the tobacco entirely by the aid of the sun.* In Cuba, the stalks are allowed to remain on the soil till after midday, to free them from their natural or acquired moisture, when they are stored; and the following day the leaves are plucked off the stalks and strung up in rows to dry. On the completion of this process, some are put into rolls with the view of being ready for exportation, and the packages are left piled up together. In the storing away of the tobacco into hogsheads, care should be taken to see that each bundle is separately placed, and the leaves have their ends reversed at each alternate tier. If the tobacco be well pressed, each hogshead will contain as much as a thousand pounds of tobacco. Frequently the tobacco is intended for the manufacture of snuff, in which case the leaves are compressed into handfuls and well corded with a peculiar fibre, so as to harden the balls which, when dry, have only to be rasped to produce the genuine rappee snuff.*

B—In the Phillippine Islands the leaves are gathered and dried in the shade, strung on little sticks, so as not to touch each other and to allow of the free circulation of air. At this time exposure to the sun or air is injurious to the tobacco, causing it to become discolored, and making the leaves dry and brittle. When this happens, the leaves are laid out in the dew for a night to render them moist, and in that state they are left to ferment in bandalas or rows. Care is necessary, as excessive fermentation will rot the leaves. About two days will generally suffice, after which time the packs are turned and allowed to remain thus for three days longer, and are then pressed. Before doing this all the bad leaves are removed, and the good ones allowed to remain on the sticks in rows, but well covered, to prevent getting dry.†

C—Preparation in India.—In Chinglepnt palm leaves and straw of the *Varagoo* or *Panicum Miliaceum* are spread thick on the ground, and on this the tobacco plants are stacked and covered over with straw and palm leaves and pressed down with stones for five or six days. When the weights, straw, &c., are removed, the tobacco plants are taken up and hung in the shade by their stalks for a few days till the stalks become quite dry, when they are taken down, placed in a small close room, and covered as before with palm leaves and straw, and pressed down by weights. Should the plants have become too dry and brittle, a few stalks are cut out and boiled with a sufficient quantity of water, to which a cake of palm sugar or jaggery is added; and this decoction is sprinkled on the tobacco previous to stacking it the second time. The stack is turned once in three or four days; and when this has been done several times, the leaves are stripped off the stalks, and are tied in bundles, each containing from sixty to seventy leaves. These are again stacked in bundles, and weights are placed on them after being covered with straw, &c. The bundles are re-arranged once every three or four days for two or three weeks, when the tobacco is considered cured and fit for use. In Behar, the leaves are plucked and laid on the fields night and day, so as to have the benefit of the dew and sun, and they are then gathered and packed in straw or hill grass. Before they are packed the stalks are cut away and macerated in water for several days, and the infusion thus obtained is sprinkled freely over the leaves with the view of improving their aroma. This is repeated as often as is con-

* Mrs. H. Lynch, "Wonders of the West Indies."

* Mrs. H. Lynch, "Wonders of the West Indies."
† Colonel Joseph-de-Hezetu.

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sidered desirable, and, after each application, the leaves are repacked. When they have continued thus sufficiently long, the packages are undone and some soil impregnated with alkalis* is sprinkled upon the leaves till they are quite dry. In Orissa, Salem, and a few other Provinces, the tobacco is wrapped up in straw and buried under ground for the first six or eight days. It is then taken up, stripped of the leaves, and weighted, &c.

D—Preparation of the Tobacco of Commerce.—*Shag* is prepared by moistening and compressing tobacco, and then cutting it with a knife-edged chopping instrument.

Returns is another variety of smoking tobacco. Kanaster is a favorable kind prepared from Havanah tobacco. It received its name from Canastra (a Spanish word, signifying a basket) because it was sold in baskets. The term is now also applied to the tobacco from Varinas. Pigtail and negrohead are chewing tobaccoes. Cigars and cheroots, the latter distinguished by their trunkated extremities, while cigars have a pointed extremity, called the "curl" or "twist," are extensively manufactured in London. Woodville's cigars and Manilla cheroots are in request by smokers. "In the manufacture of snuff, the tobacco is fermented by placing it in heaps and sprinkling it with water. It soon becomes hot and evolves ammonia. The extent to which this process is allowed to proceed varies with different kinds of snuff. The immense variety of snuffs found in the shops are reducible to two kinds; viz., dry snuff, including the Scotch, Irish, Welsh, and the rare Spanish; 2nd, moist snuffs or rappees, under which are included simple rappee (as the brown and the black, the Cuba, the Carotte, the Bolangero, &c.), mixed rappees (as Hardman's genuine, No. 37), and the scented rappees (as Princes mixture, Princeza, &c.) The Scotch and Irish are prepared for the most part from the midribs; the Strasburgh, French, and Russian snuffs, from the soft part of the leaves. The rappees are usually kept moist by pearl-ash. Sal-Ammoniac is frequently added to the snuffs. The siftings, sometimes termed thirds, are usually reground." Tobacconists employ in the preparation of tobacco a solution of sea salt sp. gr. 1.107: this is termed the sauce or liquor. In the preparation of the Macouba snuff of Martinique, Molasses, or a solution of extract of liquorice, is added to the salt sauce by which this snuff acquires a violet color.†

E—Manufacture of Cigars.—Men, women, and children are employed in the manufacture of cigars. The lamina of the leaf is torn off the midrib, and each half of the leaf is passed to a second person, who, with the assistance of a third, crops off the refuse, which is placed in the leaf, a broom stick or thick straw being fixed in the centre. The leaf, with its contents, is rolled into a cigar, when both ends are cut or the free end moistened with gum and fastened, all this is completed very quickly. All Indian cigars have the broomstick, the object being free ingress of air, and that the cigars may draw well when smoked. To prevent the tobacco getting dry and brittle, a decoction of the stalks is frequently sprinkled over the leaves, and they are kept well covered. In some places a little nitre is added to the decoction. In India, imitation Manillas, Trichinopoly cigars, and Lunkas, are the great favorites. In Calcutta, Chinsura cheroots are well spoken of. In Europe, Havanah cigars are the most prized. Cigars have also fancy names given them according to the locality in which they are manufactured or the name of the maker. The tobacco met with in commerce has a brownish color, a strong narcotic and peculiar odour, and a bitter nauseous taste. The dark-colored tobacco is the strongest.

The following are the principal commercial kinds:—

F—American or North American.—The Virginian is one of the strongest kinds, and is therefore not fit for cigars, but is smoked in pipes, and is used medicinally, or for the manufacture of snuff. Its color is a deep brown, and the leaves feel unctuous. The Maryland is paler, yellower, weaker, and fit for smoking purposes. The pale cinnamon is the best, the "scrubs" the most common. The Carolina is less frequently met with.

G—South America.—The Havanah is most esteemed for smoking. Its color is yellowish brown; its odour musky or spicy. It is imported in heads. The Cuban tobacco is an excellent kind. Both these kinds are remarkable for the light yellow spots on the leaves. The Columbian is imported in heads and leaves, and is much esteemed for cigars. The Varinas is brought over in rolls; the Orinoco in leaves; the Porto Rica in rolls; and the St. Domingo in leaves.* The tobacco of Paraguay is scarcely, if at all, inferior to that of Havanah.†

XI.—Description of Indian Tobacco.

The tobacco leaves of Southern India are of a yellowish brown color, soft, pliable, and moist, of a strong narcotic and rather unpleasant odour when well prepared; otherwise it has a sickly mawkish smell with a bitter, nauseous, acrid taste. The localities in which the tobacco is grown, and the modes of culture and cure adopted, give rise to variations of greater or less degree from the above description. East Indian tobacco has never attained a high repute, doubtless from its culture not having received attention. The Manilla is much esteemed. It is a dark colored tobacco.

* Known as "Dhobies' earth," containing impure carbonate of soda, or potash.

† Ure's Dictionary of Arts and Manufacture.

* Pareira's Materia Medica.

† Mansfield's Paraguay, Brazil and Lakate.

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The following are the principal kinds met with in commerce:—

1. Bhilsa is largely produced and exported to most parts of India, and is the kind most in demand. It is used chiefly in smoking and chewing. It is generally of a dark brown color with a strong narcotic odour.

2. The Lunka* of the Northern Circars is in great request for the manufacture of cigars and snuff, and for chewing. The celebrated Masulipatam snuff is manufactured from it. A good deal of tobacco, the produce of various villages, often finds its way to different parts of India, and, when procured from the bazaar, it is difficult to distinguish one kind from another. Cheroots were sent to the Madras Exhibition of 1855 from Trichinopoly; and a large supply of Lunka cigars, manufactured from the nicotina rustica on the islets of the Godavery, where the cultivation is rapidly increasing, were also exhibited. The Lunka cigars exhibited were of a superior quality, and the whole stock sent to the exhibition, amounting to 40,000, was purchased and sent to the Crimea. Manufacture exercises a great influence over the quality of tobacco. Some samples of the cheroots exhibited were very badly prepared and of an inferior quality. Two bottles of snuff from Masulipatam were sent to the Madras Exhibition of 1855; this appeared oily and moist.† To the Madras Exhibition of 1857 tobacco was sent from Chinglepnt, Coimbatore, Masulipatam, Pegu, Rajahmundry, Moulmein, Madura, Tanjore, Hyderabad, and Vizianagarum. The tobacco from Tanjore was considered the best, that from Rajahmundry the next, and all the rest inferior. To the London Exhibition of 1862 tobacco was contributed from Mysore, Wellesley, Penang, Moulmein, Raugoon, Akyab, Arrakan, Sandoway, Cuttack, Assam, Ahmedabad, Poona, Midnapore, Lucknow, &c. A medal was awarded to Colonel Phayre for sound, well-grown, and fragrant leaf-tobacco, and the Government received honorable mention for leaf-tobacco. The Shiraz and the Salonica (ancient Thessalonica) are valued Asiatic kinds, as also the Latakia, or Laodicean. Turkish tobacco is pale and yellowish.

3. *European Tobacco.*—The only European tobacco extensively consumed in England is the Amersfoort, a Dutch tobacco. Several German, Hungarian, and Ukraine tobaccoes are occasionally met with. *(Sinsheim Die Rauch u Schnuff. tabako Fabrikation,* 1826.)‡

XII.—Uses of Tobacco.

Tobacco is now in very general use in all parts of the world, either in the form of chewing, smoking, or snuff-taking. Tobacco-smoking among the natives of America seems to have been of very ancient date. The tobacco was either rolled up in leaves and so smoked, or was placed in pipes manufactured for the purpose, and consisting of a small cup or bowl attached to a tube, through which the fumes were drawn to the mouth of the smoker. This mode was adopted for the sake of economy, as thus no part of the tobacco leaves or stem was lost. The various kinds of cigars and cheroots are made to suit the fashion of the day; and, as a rule, a part at least, about one-eighth, is thrown away unconsumed owing to the heat it conveys directly to the mouth on becoming short. Both smoking and chewing are very general in India, not only among the more civilized natives, but also among the wild tribes that inhabit the jungles; these are not able to do without tobacco, and cultivate it for their own use. Pipes are not much in use, cheroots being the usual form in which tobacco is smoked by the natives. The poorer classes roll up a small piece of tobacco in a large leaf and double it in the centre, when the upper opening is filled with powdered tobacco. The leaves are then doubled to a right angle to prevent the tobacco falling out. Such rolls of leaves are often carried about, stuck in the string usually worn round the waist. Smoking is practised by women and children as well as by men.

1. *Chewing.*—If anything, this is more practised than smoking. Most betel consumers make use of tobacco with their betel-compound. The poorer classes who cannot afford betel use tobacco alone. The leaves of the tobacco are used for this purpose, and a piece is taken off as required and retained in the mouth like a quid. In some parts of India I have met with natives who powder the tobacco and place it between the lower lip and teeth.

2. *Snuffing* is a general practice among the natives: both dry and moist snuffs are procurable in the bazaars. Most of these are prepared in the different towns and villages, and many people prepare their own supply. The only snuff that is imported is the celebrated Masulipatam snuff, which realizes about 2 or 3 Rupees the quart bottle. I have never yet met with native tailors, no matter of what caste, who did not snuff; they say it clears the eye-sight. Snuff is sometimes prepared on the spot. A native will smear the palm of his left hand with chunam, and then drying by the fire a piece of tobacco till quite brittle, will place it on his palm thus smeared, and bruise it to powder with the right thumb, when it is ready for use. The more wealthy frequently scent their snuff with otto of roses, sandal wood, or some other scent.

Snuff boxes of all kinds, made of various metals, horn, &c., are in use. Natives frequently

* From Lunka, an Island.

† Jury Reports.

‡ Pareira's Materia Medica.

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use the base of the dried stalk of the plantain, or that of the areca nut, for keeping their snuff in. Shells of different fruits are also in use, of which may be mentioned the cocoanut, bael, wood-apple, seed of the *Calophyllum Inophyllum*, or Alexandrian Laurel.

3. *Medical Uses.*—Tobacco is useful in various complaints, such as dropsy, colic, strangulated hernia, tetanus, asthma, &c., &c., but its use always requires great caution. It is generally used as an infusion, one ounce of tobacco to a pint of boiling water; but it is more frequently administered in the form of an enema. The principal effect of tobacco is its power of relaxing the muscular fibres by the depression it causes, and of producing a purgative, emetic, or diuretic effect. Tobacco enters largely into Indian Veterinary Medicine, and is also used to destroy vermin either in the case of man or beast. It is in general use in the form of a strong decoction, and is thought to prevent the ravages of insects. Here also care is necessary as to its indiscriminate use as an insecticide to man or animals.

XIII.—Physiological effects of Tobacco.

The effects of tobacco are sedative, antispasmodic, purgative, emetic, and diuretic. These effects are dependent on the quantity and mode of administration.

Tobacco, smoked for the first time, produces nausea, sickness of stomach, and vomiting, depressing the action of the heart and arteries. In those habituated to its use, it produces a soothing or calming effect on the system. In some peculiar temperaments it even produces poisonous effects. Although like all similar habits it would be better were it never contracted, the use of tobacco does not generally do any harm, and may, in some instances, be beneficial; but, within my own observation, the immediate use of tobacco has sometimes produced very serious results. Many of the ill effects of tobacco-smoking might be avoided by the use of a silver, ivory, or other mouth-piece, and which, before being affixed to either cigar or pipe, should be loosely stuffed with a little cotton-wool. The adoption of the mouth-piece, in the first place, saves the lips from the direct irritant effects of the tobacco itself, which is a great advantage. And the cotton-wool arrests the empyreumatic and other oils that the cigars contain without interfering with the process of smoking, or with its soothing effects. This may be proved by the fact that the wool will be found saturated with oil, &c., if examined afterwards.

Snuffing produces at first violent sneezing; subsequently it rouses the nervous system for the time being.

Chewing acts as a sialogogue by increasing the flow of the saliva. Taken internally, it causes nausea, vomiting, and vertigo, with great prostration of the system: these effects are in proportion to the dose administered. In poisonous doses the prostration increases, the pulse becomes small, low, and tremulous; the skin gets cold and covered with clammy perspiration; and confusion with imperfect vision and syncope take place. Tobacco acts on the nervous system, and, by depressing the heart, causes palsy. It should always be considered a potent, unreliable sort of medicine, and requires great caution in administering as a remedy. Immoderate smoking causes nervousness in persons of peculiar temperament. Its sudden withdrawal has no prejudicial effect on the system beyond the feeling of requiring the usual stimulus at the accustomed hour, and it only requires a little moral courage to shake off the habit. I have known many inveterate smokers (Europeans) who have suddenly forsaken the habit without any prejudicial effect; and an experience of seven years of jail-practice, in which I have carefully watched the sudden and complete withdrawal of tobacco, in all its forms, from native convicts, convinces me that the sudden withdrawal of tobacco exercises no ill effect on the individual; for I have never seen any such consequences ensue, nor have the persons thus deprived of their accustomed stimulus attributed any ailments to this cause.

XIV.—Commerce, Statistics, &c.

Tobacco, notwithstanding all prejudice against it, continues to prosper and drive a thriving trade, and the demand for the article is enormous. Notwithstanding the extent to which the commerce has extended, its price having tripled or quadrupled what it was some twenty years ago, the consumption is still daily increasing; and, if the supply were in proportion to the demand, the latter would no doubt greatly increase. Although the supply of 1863 is said to be two millions of pounds greater than in 1862, the price has not in any way been affected. In 1820 the proportion consumed or allowed to each individual was about 12 ounces; and in five years the quantity had increased to 15 ounces. In ten years smoking became so general that $1\frac{1}{7}$ pound was necessary to supply the cravings of each person. In the subsequent ten years $1\frac{1}{4}$ pound was greedily purchased; and, had a larger supply been forthcoming, it would have met with ready purchasers. Yet, we should call to mind that, perhaps, fully one-half of the population, including women and children, do not smoke, and a large proportion of males dislike the weed; nevertheless, the consumption of tobacco is so great, that the investment in tobacco cultivation would be equivalent to other staple products, such as cotton, coffee, and indigo, if the necessary attention were paid to it.*

* Madras *Daily News*.

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The late American war centred the attention of nearly the whole civilized world on the subject of cotton, to the exclusion, I fear, of other products, such as tobacco, which, if not equally useful, is of great commercial value, and for which, like cotton, we are principally dependent on America, while India is at all times capable of producing both cotton and tobacco.

The English, of all European smokers, smoke the strongest tobacco, and consequently prefer the American to the Asiatic kinds, which latter are principally consumed in Asia itself, or by the European nations bordering on it.

XV.—Summary of the Subject.

Man, in the earliest age of the world, sought out substances for food, and materials for clothing; but his wants in these respects being supplied, he soon began to surround himself with luxuries which, from the force of habit, and increase of civilization, gradually became necessaries. Intoxicating and stimulating drugs and beverages came to be used; and man became so enslaved by pernicious habits, that it was impossible to eradicate them from his nature. The use of such stimulants led to their abuse, and arguments founded on religion and morality were urged against their use, but without avail. Tobacco, only introduced in the 15th century into Europe and Asia, &c., has become so absolutely necessary to mankind, that there is scarcely a portion of the inhabited globe, perhaps, in which it is not known and appreciated. Thus a plant that otherwise would be considered a worthless weed is now one of the staple products, and adds largely to the revenue of most nations. Thus too, a habit acquired from wild and barbarous Indians by a few travellers has become a necessary to civilized nations, and the cultivation of tobacco has become of great importance, more especially when we consider that the demand is daily increasing. It will be seen from this essay that much care and attention are given to the cultivation of tobacco by the natives of Southern India, but that the seed is indifferent, and has more or less degenerated from long use in the same districts. I had occasion, in May 1862, to call the attention of the Madras Agri-Horticultural Society to the subject of tobacco, and I suggested that foreign seeds of the best description should be procured and distributed. This has been done since through the Board of Revenue and the Agri-Horticultural Society, Madras. The cultivation is extremely remunerative, and, according to the method detailed as in use at Chingleput, a profit of about 50 Rupees is realized on every cawnie of land; but in consequence of the time and labour required being greater than in other cultivations, from the close attention which the tobacco plants require, the ryot can ill afford to bestow sufficient time on its culture without neglecting what he considers his more legitimate occupation of growing cereals: he seldom extends the cultivation of tobacco beyond one-sixth or one-fourth of a cawnie of land. There is also difficulty in disposing of the produce in many districts. But should a fair demand be created, there is every reason to suppose that a superior article will and can be produced equal to the best American. The distribution of superior varieties of seed should also be continued, and prizes for the best samples be given to the ryots in the different districts annually, to give greater encouragement to the growth of tobacco by such means. I fully believe that the cultivation of tobacco could be greatly extended and improved, so much so as to place India in a position to compete with America in the growth and supply of this article.

PLANTER-LIFE IN BEHAR.

(*By* A. Forbes, *Special Commissioner of the Daily News.*)

The indigo planters have their poet laureate, and many a time and oft, since first I heard the rousing stave sung down in Hajeepore by one of the worthiest of genial good fellows I ever met, I have caught myself humming the chorus of the "Planter's Song." Here it is:

Sing hi, my lads, sing ho;
Drive on, my lads, hi ho—
Who wouldn't spend his days
In a planter's bungalow?

Who, indeed! To one blessed with good health, the faculty of disregarding sun-heat, and the capacity of undergoing a fair amount of exertion, the life of an indigo planter in Tirhoot or Chumparun is very full of wholesome, manly pleasure, and has as few troubles as a reasonable man can well expect. The indigo planter is fairly well paid, for the most part he is well housed, his work is arduous at certain seasons, but at others he has plenty of leisure; society is within his reach at the cost usually of a couple of hours' ride; he has his daily newspaper, and never need want for new books and the recent periodicals; he can get pig-sticking almost whenever he wants it, and enjoy the varied pleasures of a race-meet every now and then; he can get to Calcutta in a couple of days if he wants to visit the capital; and last, but not least, his lot is one which he does not ordinarily find insuperable difficulties in persuading the girl of his heart to share. In the old uncivilized days things were different. I have spoken with an elderly gentleman who, earlier in life, had lived seventeen years without seeing an European lady, and, indeed, he could reckon on his fingers the white faces he had seen. Those were the days of "no heel taps," of discreditable indigenous connections, and of a roughness in manners which has now altogether disappeared. Planter-life in India has now very many features in common with country-

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life in a good country at home. British ladies are no longer phenomenal in the Mofussil by reason of their rarity, and their presence has exercised its invariable influence; it has sweetened, elevated, and purified country-life in India.

An indigo "concern" is an affair to be spoken of with respect and consideration, for it represents much capital, much outlay, and, with good fortune and good management, much profit. A "concern" generally consists of one head factory, with several "outworks," that is, outlying indigo farms, too far distant from the chief centre to be superintended therefrom in detail, and on each of which therefore there is a resident assistant, who not only raises indigo, but manufactures it where grown in the vats and presses of the sub-factory. This is not the place for entering into an explanation of the difficult question whether indigo planting is beneficial or detrimental to the agricultural interests of the native population; nor if it were, have I that familiarity with the condition of the topic which would warrant me in making the attempt. It seems to stand to reason that a grasping and unscrupulous planter can do not a little harm in this way; but planters of this character are few and far between, and I can testify to this, that the native villages in the neighbourhood of indigo factories almost invariably wear a more prosperous aspect than those in districts where there is no indigo cultivation. It is a happy accident for Tirhoot and Chumparun in the present season of dire trouble that there are indigo planters within their borders. But for them, the adequate transport of grain into the distressed districts would have been an impossibility, and the devotion with which the planters are laboring to assuage the sufferings of the native population around them is one of the few bright spots on the sullen desert-surface of the famine.

An apprenticeship must be served to indigo planting as to most other avocations. A youngster comes out from England, as ignorant of the language and the ways of the natives as he is of the art and mystery of cultivating indigo. For a year or two he has no "charge," but abides at a factory, where he learns the business and the language under the tutelage of an expert. Then he blossoms into an "assistant," gets the local management of an outwork factory into his own hands, and virtually commences an "indigo career." He may be an assistant for years, on a salary of Rupees 200 a-month. But his bare pay, whether it be two hundred rupees as an assistant or triple that sum as a manager, is not to be regarded as an index of his remuneration. He has his bungalow rent-free, the factory finds him in horseflesh, since horses are necessary to enable him to do his work; it finds him also in servants, in bread, lights, and garden-produce. There is a commission on the "make" of the year which commission often is worth more than the salary; and there are such perquisites as "salaamis," &c., into the mysteries of which I do not pretend to have penetrated. If a fellow is of an economical turn, he may be able in a good year to lay by the whole of his pay. Then, if he has capacity, and still more if he has interest in combination with capacity, he attains unto the more eligible position of a "manager," with personal charge over the principal factory, and the supervision of the outworks. From manager he may "get into a concern," beginning probably with a "one anna" share, and gradually improving his foothold till he owns a concern all to himself. But, whether assistant manager or managing proprietor, he is always the same frank, genial good fellow, ever ready to give himself trouble for the behoof of the stranger within his gates, ever full of energy and "go," doing his work and enjoying his pleasure alike with equal vigour and stout British manliness.

The life of an indigo planter is by no means all beer and skittles. For some six months in the year he is in the saddle from six o'clock in the morning until noon, superintending the ploughing, the sowing, the weeding, and the reaping. About the end of June "Mahaye" begins, and lasts until the beginning of September. "Mahaye" is the manufacture of the indigo, the mashing and beating of it in great vats, the running of the water into other vats, and the treatment of the stuff through various stages until it emerges from the "presses"—veritable indigo worth ever so many Rupees a pound. "Mahaye" occurs in the very hottest part of the Indian year; but the indigo planter must disregard the heat if he is to keep up his character and earn commission. He spends hours every day in a little shed perched high over his vats, whence he can superintend the labors of the coolies, and see for himself that the mashing is thorough, and the running off takes place in the nick of time. He must generally pervade the press-house, and it will not do for him to be dainty over a stain of blue on his hands or face. He must superintend the storing, for the mild Hindoo is not proverbial for honesty, and feels sorely tempted when the chance offers to carry off a piece of indigo which will hardly make a knot in his cummerbund, and yet for which he can realise a rupee. When "Mahaye" is over, the cold weather is thinking of setting in; and then, after giving a start to his cultivation, the indigo planter feels himself a free man for a season. His holiday time has come, and he is the man who knows how to enjoy a holiday time.

A current of pleasant social intercourse ripples on all the year round. The distances are great, no doubt, from factory to factory, but distances go for little among men who have

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many horses, and to whom physical exertion is more of a pleasure than a toil. A man thinks nothing of driving or riding thirty miles to drop casually in on a "neighbour," see the pleasant face and hear the pleasant voice of a lady, and play a game of billiards with her husband or her father. It is not often that there is a set dinner party at the house of a planter, but it is not often that he dines without a guest or guests at his table, especially if he is a married man. At every meal a spare cover or two are laid on chance, and somebody or other is pretty safe to turn up and use the knife and fork. Hospitality among indigo planters is not reckoned a virtue; it is a custom—an affair of habit, and nobody thinks it anything else than a matter of the commonest course. Stranger and friend are welcome alike. The latter requires no letters of introduction; and the only difficulty which he experiences is in being allowed to go away. Home hospitality has passed into a proverb, but it must be said of us that we are hardly enthusiastically willing to lend our horses. But lending his horses is an every-day custom with the indigo planter; indeed I have sometimes thought that he keeps horses in order that he may lend them. Without this readiness to lend horses, it would be impossible to get about the country. But with a day's notice, one may drive fifty miles between day-break and dinner; and this too although the run of each horse is only some four or five miles. It is all managed for you without any trouble. Mr. ——, with whom you are staying, sends on a note to Mr. —— at the next factory, who sends on to the next, and so the thing is done. At every five miles you find a horse waiting for you, which you use, sending your "salaam" to the owner, of whose very name you may be ignorant.

Nothing has surprised me more than the success with which the planters keep abreast of the world in literature and information. To every factory comes daily the *Pioneer* or the *Englishman*, two or three days old, according to the remoteness of the locality. By the English mail come out the *Home News*, the *Mail*, the *Illustrated*, the *Graphic*, and *Punch*. Then every group of factories has its own book club and magazine club. The secretary of these is almost invariably a lady, and the books are circulated from factory to factory by messenger-peons. "Mudie's" is the great fountain-head whence these book clubs are fed. The secretary keeps her eye on the advertisements of new books and receives suggestions from the members; and she sends home from time to time a list of the books which are desired, which duly arrive by return mail. The budget is by no means entirely made up of novels, and I have seen some uncommonly tough reading among the *olla podrida* of a book club. In remote places, where life is very quiet, excitement becomes very intense as to the *denouement* of a good story which is running its course in a magazine.

While doing his work like a man, the planter contrives to pack a deal of amusement into his life. I believe him to be the original inventor of the game of hockey, now so popular at home. In the cold weather, match follows fast upon match, and some of the ponies are prodigies of speed and dodginess. Nearly all the planters belong to that gallant regiment the "Tirhoot Mounted Rifles," to which Chumparun furnishes the contingent of a troop. The troops meet occasionally for drill at their respective head-quarters, and after drill there is sure to be a hockey, and as likely as not a ball. Once a year there is a grand parade and inspection at the regimental head-quarters, and fair ladies look upon the wheeling, the charging, and the ball practice of the gallant mounted riflemen. I don't think there is a planter's bungalow in the district that has not in it a sheaf of boar spears, and the sport of pig-sticking is enthusiastically engaged in whenever an opportunity occurs. A man will ride two hundred miles, there and back, for the sake of making one in a pig-sticking party. A few of the planters keep race-horses, doing their own training and riding; and a man who rides boldly in a steeple-chase over an Indian country must not stand particular over the breaking of a few of his bones. One of the best and most successful gentlemen jockeys, perhaps, in India, both over a country and on the flat, is a Chumparun planter, who trains and rides his own horses, and is reported not to have a single bone in his body that has not been fractured at least once. A race meeting in Behar is a mighty serious business. At home we go to Ascot, or to the Derby, or Goodwood, make a day of it, and have done with it. In country districts, to be sure, the race ball remains an institution, but it comes only once a year, and when the last carriageful has left in the grey dawn, the Assembly rooms in the county town return to their sombreness, and are available for lectures, bazaars, and cheap readings for the rest of the year. But here a race-meet lasts over a fortnight, there being racing every alternate morning, and a ball every alternate evening. At the Sonepore meet, on the plain near the junction of the Gunduck with the Ganges, all the company abide throughout the festival in tents. Parties are made up of considerable size, each party having its own camp. Dressing, dining, flirting, and dancing are the order of the day and night, and men lose at once their money and their hearts. The balls are held in the large room on the ground-floor of the race-stand, and people come from afar off—from Calcutta, Bombay, and even from Ceylon—to participate in the varied round of pleasures which the Sonepore meet affords. The planters muster strongly, and carry off their own share both of ladies' smiles and

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of cups and stakes; but they are beginning to prefer the less cosmopolitan meets at Mozufferpore and Moteebaree. There have been times when lady partners were somewhat rare in the long ball-room in the Jordan Chupra; but last year, I am informed, the fair sex did so abound that positively there were wall flowers. It is an even chance that the married planter of Tirhoot has met his fate at a Mozufferpore race-meeting, and numerous engagements take date from that pleasant festival. Such an occasion, indeed, is it for engagements that a lady has been known to commit herself in this way to two different gentlemen at the same meet,—a procedure calculated to result in some embarrassment, not to speak of the confusion entailed. If our married planter has not found his wife at some such gathering as this, the chances are that she is his old sweetheart of the early days at home. The couple have loyally kept their pledge, and when the man finds himself in a position which entitles him to marry, his betrothed comes out to him, and lives with some lady friend until they twain are made one flesh. Then the wife is brought home to the husband's bungalow, and the modest married life begins. I know nothing prettier, purer, and more genuinely true and natural, than married life in the Indian Mofussil. The conditions of their life seem to knit man and wife in a peculiarly tender union; not alone are they man and wife, but comrades and friends as well. The man is elevated by marriage; the woman never deteriorates. My life here has been one of hurrying and scurrying, affording but scant opportunity for social intercourse; but there rise up before me as I write, not one, but many pictures of happy pure domestic households into which I have had a glimpse since I crossed the Ganges at Hajeepore.

In truth, the British-hood of the whole district seems one happy family. I believe there is some jocular jealousy between the planters of Tirhoot and Chumparun which finds harmless expression in such a stanza as the following:

It's all very well to loaf and swell
In Mozufferpore and Sarun,
But give me the place that goes the pace,
Hurrah for old Chumparun!

But they don't quarrel when they meet, but shake hands and call each other by the most amazing familiar nicknames, which to me are a source of inexhaustible amusement. Every man has his nickname, and let it be ever so personal and rasping, he answers to it in the cheeriest way imaginable. It is embarrassing, it will be admitted, to the entire stranger, to hear a gentleman with whose real name he is unacquainted, addressed as "The Long Thief." You don't like to call a man "Long Thief" whom you have not known five minutes; it occurs to you that it might be regarded as a liberty. But what are you to do when you don't know any other name, and when you find him answering to that name as readily as if it had been bestowed upon him in lawful baptism. In familiar intercourse no man is addressed by his right name, but by his nickname. "Hullo, Boach!" shouts your companion to a gentleman whom he descries in the offing in a buggy. "How goes it, Mangel Wurzel?" is the ready rejoinder. One knows what a mangel wurzel is, and conjectures that the name may have been bestowed by reason of a presumed agricultural origin; but whence "boach," and what may "boach" be? "Boach" turns out to be the native for alligator; and you feel that the subject does not demand further investigation.

Pallida mors occasionally shows its wan face in the planter's bungalow, as everywhere else; and when it comes it seldom dallies over its errand. You may lunch with a man who is in rude health, and when dinner-time comes you may hear that he is dead. Only the other day I visited a young planter whose lines seemed to me to have fallen in very pleasant places. He had just married a fair young wife, he himself was "full of lusty life," and around the pair it appeared to me that there was everything which could make life pleasant. A little later I was staying with the uncle of this young planter, from whom but the day before had come a letter announcing an early visit. The morning brought a telegram—"David is lying most dangerously ill." The uncle made hurried preparations for the long journey, for he knew full well the meaning of a dangerous illness in India. But before he had started there came a telegraph peon hard on the heels of the first, with the laconic message, "David died at ten o'clock." So the journey of the uncle was no longer that he might see his nephew alive, but that by dint of hard travelling, he might lower his nephew's head into the grave. There is hardly a factory garden in the corner of which there lives not among the blossoming shrubs the quiet *memento mori*, in the shape of tombs. At some of the old factories there is quite a little grave-yard, where the children lie side by side with old folk, and where the story of the factory is written in brief on the tombstones. But we can die but once, and the graves in the garden are not to throw a gloom over the cheerful planter-life. Each man to his calling; but I often find myself wishing that the avocation of an indigo planter were my own, and that I had a veritable claim, and not merely a courtesy-privilege, to join in the frank, simple doggrel chorus—

Then let us pull together, boys,
Drown envy, care, and strife;
I pledge each brother planter,
And each brother planter's wife;
For the dearest, sweetest, best of all,
Are the ladies whom we know.

—*Indian Economist*, July 31, 1874, p. 322.

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